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JUNE AND JULY, 1910

ARTICLES BY

Alexander Graham Bell

J. Kerr Love, M.D.

Giulio Ferreri

Edward Allen Fay

The Association's Booklet
American Statistics of Speech-Teaching

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THE EDITOR'S LETTER

THE Association has the honor this month of publishing three contributions of the first magnitude—"The Deaf Child from the Viewpoint of the Physician and of the Teacher," by James Kerr Love, M. D.; "Lip-Reading," by Giulio Ferreri, and the Introduction to "The Note-Book of Alexander Graham Bell."

Dr. Love's paper is worthy in all respects of inaugurating the new "clinical" era, when the physician and educator are to co-operate for the betterment of the deaf. While going with all possible thoroughness into the subject, as indicated by the title, the monograph also ramifies, *inter alia*, to a consideration of the history of education for the deaf, of the problems incident to their instruction, and finally, indicates the possible future trend of educational methods for the deaf. The well-nigh universal scope of this paper, the authoritative handling of the theme, and the literary excellence of the style in which the thought is expressed, all contribute to the anticipation that this paper may well become a classic.

If Dr. Love's article is of large significance "for the increase and diffusion of knowledge relating to deafness," Prof. Giulio Ferreri's treatment of lip-reading is of capital importance as a pedagogic monograph designed for those who labor "to promote the teaching of speech to the deaf," and it is not unlikely that his conclusions will arouse widespread discussion, if not important modifications of teaching methods.

Before beginning Dr. Bell's series of articles, contributing to "the stimulation of knowledge," it has been deemed advisable to publish, as an introductory paper, some brief autobiographical notes showing the early environment which contributed toward the molding of his genius and the first lines along which his inventive faculties were directed. If these notes show nothing else, they show that Dr. Bell was born to invent, born to investigate, born to experiment, and trained to study and reflect.

As a mere glance over the table of contents shows, the other main articles in this number are all by leaders of the teaching profession. Director Hansen's article on "The Basis of the Binet-Simon Inquiry" goes far to destroy any claim of authority which those unfortunate investigators may assert for their deductions, while Miss Mabel Ellery Adams's life-history of George Draper Osgood is a *per contra* constructive argument for the efficiency of speech-teaching to the deaf. President Gallaudet's retirement is the occasion for a sympathetic estimate of the services rendered by that great leader to the education of the deaf. This appreciation was written at the special request of the Association by Dr. Edward Allen Fay, Vice-President of Gallaudet College, and for many years Dr. Gallaudet's collaborator.

The frontispiece this month is drawn by one of the most talented and versatile men of the younger generation. Mr. H. M. Hoyt, Jr., is a poet and writer of fiction as well as an artist. A remarkable series of his poems have appeared in Appleton's and The Smart Set, while The Munsey, The Pacific Monthly, and other standard magazines have contained fiction and illustrations contributed by him. Mr. Hoyt comes from a brilliant family of lawyers, his father being counselor for the Department of State, and, like President Taft, formerly Solicitor General of the United States, while a cousin is Solicitor General of Porto Rico.

The next number will contain the first installment of an important department dealing with hints on home training for little deaf children, which is expected to be of great value to mothers, as well as to teachers of the little ones. This department is to be conducted by Mrs. J. Scott Anderson, principal of the Swarthmore School and Kindergarten for Deaf Children, whose qualifications are well known to the entire teaching profession. Aside from her practical teaching experience at the Wright-Humason School (now the Wright Oral School) Mrs. Anderson has a wide technical and theoretical grasp of her subject, gained from post-graduate courses in psychology and pedagogy under Doctors Thorndike and Norworthy at Teachers' College, Colum-

bia University; in sociology under Dr. Brookes, and pedagogy under Dr. Baldwin, at Swarthmore College. Mrs. Anderson is a leader in many movements of sociological or educational importance, and her leadership in these directions has been recognized by the Commonwealth of Pennsylvania, which appointed her, in the administration of Governor Stuart, as a delegate to the Third International Congress on Home Education. Mrs. Anderson was largely instrumental in organizing the symposium on the deaf child from the standpoint of the physician and of the teacher, which was the feature of the latest annual meeting of the American Laryngological, Rhinological, and Otological Society, and her paper on the development of the hearing, read before that body and reprinted in this number, may well serve as an introduction to her department.

The forthcoming number of THE VOLTA REVIEW will also contain the opening installment of a serial dealing with China and the Chinese, together with the work that is being done for the education of the Chinese deaf. This article is written by Mrs. Annetta T. Mills, a member of the Advisory Committee of the Association and the leader of the movement for the education of the 400,000 deaf children of that empire. Mrs. Mills's fascinating account will be illustrated with more than 25 pages of the best illustrations that can be obtained from any quarter.

Other articles shortly to appear include a discussion of the Stapler method for developing the hearing, an article on the American deaf poet, Howard L. Terry, and an account of Miss Frances Wettstein's recent visit to the schools for the deaf in Norway and Denmark.

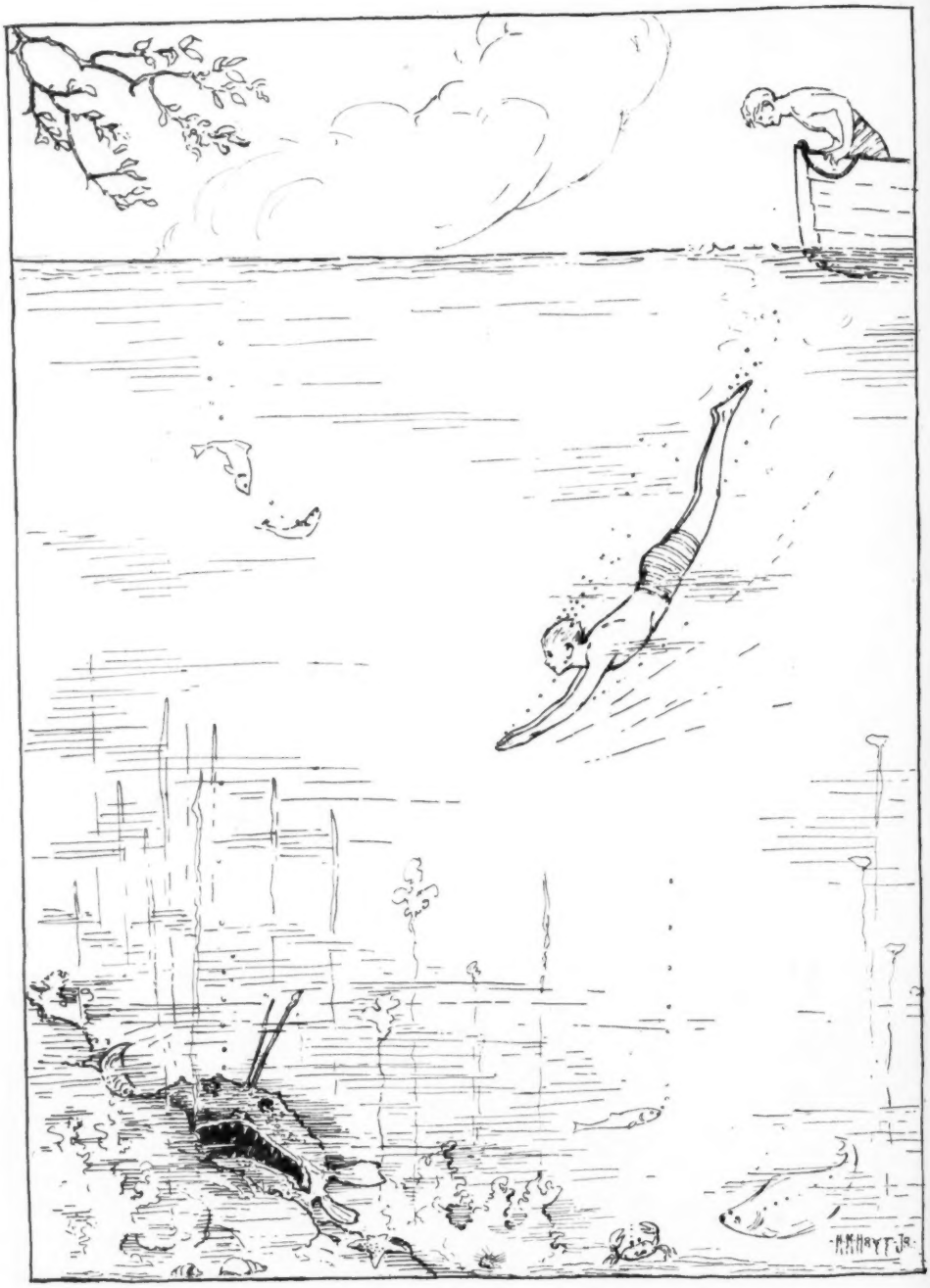
In case you desire your address to be changed, it is necessary that you notify us at once.

I am asked to announce that the special shuttles containing the Universal Alphabetics keyboard are now ready and will be forwarded anywhere upon receipt of $2.50. This price is about half the first cost of manufacture, as the cutting of the die from which these shuttles are made necessitates the expenditure of about $500. The Universal Alphabetics speech shuttle has been constructed for the use of some 35 languages and contains practically every speech symbol yet devised. The shuttles are for use on the Hammond typewriter only, on which machine they can be used interchangeably with the regular keyboard, thus giving the owner a machine for both general and special work. We are authorized to offer a few Hammond typewriters upon special terms, which will be communicated to any member upon request. The number of machines offered at this special price is very limited and will not be increased, so that if you desire one it is necessary for you to let us know at once.

All orders relating to the Hammond machine or to the Universal Alphabetics speech shuttles should be directed to F. W. Booth, Volta Building, Volta Place and 35th St. N. W., Washington, D. C.

Faithfully yours,
E. A. Goyen.

P. S.—This magazine contains a reprint of the booklet describing the work of the Association and Bureau, which we shall be glad to send to any one upon request. During the past month the membership of the Association has shown further substantial increase as a result of our fellow-members' work, one member sending in six in one mail, and, with this booklet, it is anticipated that the task of getting still other new memberships will be very easy. With an increased membership it will be possible to get out a magazine as big as this every month. The general spirit of cordial coöperation is gratefully appreciated.



"THEN I SAW A GHASTLY MIRACLE" (See "Fishes That Fish")

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THE DEAF CHILD FROM THE VIEW-POINT OF THE PHYSICIAN AND OF THE TEACHER*

BY JAMES KERR LOVE, M. D., GLASGOW, SCOTLAND

SPEAKING as I do in the city of the younger Gallaudet, the greatly respected Principal of the College for the Deaf, I am reminded that nearly 100 years ago his father came to Scotland for information about the education of the deaf, and that we metaphorically shut the door on him. Gallaudet met with the same treatment in England, and must have met with it in any country where speech was taught to the deaf, for at that time the art was a proprietary one. Gallaudet turned, therefore, to France, where the Abbé de l'Epée's sign system could be openly examined.

I am here, therefore, if you will let me say so, to repay a little bit of national debt, and I take this opportunity of thanking this American Society for giving me the chance of doing so, and also for the great honor they have conferred on me by inviting me to come here.

To understand just what speech means to man we may reflect on the cases of those children, few in number, who have grown up outside of human society with only the lower animals for companions, and, using this as a link, we may travel back in imagination to that period in human history when speech was not.

Leaving this stage, with its sign language, its inarticulate vocal calls, its poorly developed thought, and, returning towards our own time, we find primitive speech such as may still be found amongst barbarous tribes. Writing of some kind must have been the next great advance in civilization, and, although we do not know the names of the inventors and are hardly sure of their nationality, two inventions followed beside which our railways and telegraphs are relatively unimportant. I refer to the invention of the written alphabet and of the system of numerals. With speech, a written alphabet, and a system of numerals, the progress of man was assured—the printing press and the electric telegraph valuable but relatively unimportant later details.

Speech is the silver bridge over which the thought of man has come to travel. When an adult becomes deaf this bridge is broken at its further end, and is best repaired by using the eye for the lost ear. In congenital deafness the whole bridge has to be laboriously built without the aid of the architect—the sense of hearing.

If less worthy material than speech be put into the structure, the passage of thought is impeded. The deaf man feels lonely and the deaf child, who would reach out to all knowledge and truth, is disappointed because he is misunderstood and his questioning glance is not answered.

That signs are *the* natural language of the deaf is a statement constantly reiterated in books and on platforms. This

* A paper read Friday, April 29, 1910, before the American Laryngological, Rhinological, and Otological Society at its sixteenth annual meeting, in Washington, D. C.

is a dangerous half truth. Signs are really *a* natural language, both of the deaf and of the hearing. Speech has become *the* natural language of man, and a far more important one than signs.

The Atavism of Signs

In the absence of hearing, which so greatly facilitates the acquisition of speech, deaf children take to signs naturally by reverting to the habits of a more primitive type—by atavism, in fact.

Similar reversions are the ability to move the ear by means of the extrinsic aural muscles, and the tendency to scratch by a scolding woman who finds her speech insufficient to express her anger.

Now, I do not say that the ability to scratch and to make signs is of no value. Under certain circumstances I am prepared to justify both. But to describe either as natural, except in the sense that they are "reversions," is incorrect. In education we must bring the deaf into the company of the hearing, for we will never get the hearing back to the pre-speech stage of language—the stage of natural signs.

In looking over the work done for the deaf during the past 300 years, one is struck by the scarcity of medical names on the list of workers. These years may conveniently be divided into almost equal periods of 150 years, the first or sporadic period beginning with Bonet, towards the end of the 16th century; the second or systematic period beginning with De l'Epée, about the year 1760 and extending to our own time.

The Future "Clinical" Period

I think that we are at the beginning of a third period, which I may call the clinical period, during which medical men and teachers will co-operate with results beneficial to the deaf child in a degree hitherto undreamt of. Hence the importance of this meeting.

The cause of the neglect of the deaf child by the medical man is that the former has never been regarded by the doctor as a patient. A patient is a diseased person who is being studied and treated by a doctor. Now our chief business is to get the deaf child raised to the rank of a patient.

During these 300 years several medical names appear. In the sporadic period Dr. John Bulwer published, between 1644 and 1648, several works on the education of the deaf. There is nothing clinical in Bulwer's treatment of the subject of deaf-mutism, and his writings might be the product of one of the philosophical divines, like Holder or Wallis, who wrote during the same period. The work of the sporadic period was chiefly oral. The preference for the oral element was based on what we may now regard as a fortunate fallacy—that without speech there could be no thought. But for this fallacy one can hardly see how any of the deaf would have been taught at all. As it was, the sporadic period was that of the education of the deaf rich.

Another medical writer of the sporadic period was Dr. Amman, born at Schaffhausen, Switzerland, in 1669, and in after life a practitioner at Haarlem, Holland. Amman was an oralist; even the titles of his books proclaim him so. "Surdus Loquens" and the "Dissertatio Loquela" are eloquent of their purpose. But with Amman there is no traceable physiological basis for oralism. Speech and language are represented as gifts bestowed on man at his creation, all but lost at his fall, and now existing, even in the hearing, as a conventional artifice without which we should be mute.

Amman's oralism was based on his views on the divine origin of speech and on his mistaken idea that only speech could be regarded as language.

Coming now to the second or systematic period, which began with the Abbé De l'Epée and Heinicke, we find in the educational record hardly any medical names at all. With the single exception of Dr. Graser, of Bavaria, who introduced the practice of making the education of the deaf a part of the public-school system, no medical man until recent years seems to have taken any

interest in the education of the deaf. Deaf scholars on Graser's plan spent one and a half or two years under special training before entering the ordinary schools for the hearing.

This plan failed, as even with our better organized school system it would, I think, still fail.

In 1880 Hartmann, of Berlin, wrote his book on deaf-mutism, by far the ablest medical work on the subject which has ever appeared. Hartmann's book is full of insight, not only regarding the morbid anatomy of deaf-mutism, but regarding the living deaf-mute child and his educational problems, and has not received the attention it deserves, either from medical men or from teachers of the deaf.

The Physician's Attitude

What, then, was the attitude of the medical profession during this second or systematic period, at the close of which I am speaking? Generally the doctors refused to regard the deaf-mute child as a patient, but thought he would make an interesting pathological specimen. "He is deaf and dumb and I cannot do anything for him, but send me his temporal bone after he is dead and I will examine it; the result will be very interesting." Thus spoke the doctor.

From the end of the 18th century until now we have about 200 examinations of the temporal bones of deaf-mute children. Now, if this attitude of my profession were merely a historical one, I should not discuss it, but, inasmuch as it is still quite a common one, it merits examination.

That interest in a deaf child is chiefly a post-mortem one amongst present-day doctors is easy to prove.

Three or four years ago I visited Mygind, of Copenhagen, whose work on deaf-mutism from the side of morbid anatomy is of great value, but who has no connection with any institution for the education of the deaf, and, if you will refer to Mygind's book, you will find that he treats the subject of education of the deaf in a single page, and, whilst indicating a preference for the oral method, he dismisses the question of whether all should be taught orally or some manually by saying that "the solution of this problem must be left to pedagogues."

The Present "Post-Mortem" Interest

Further evidence of this kind of preference for the deaf child is that in the otological journals nearly all the references are to the post-mortem findings, seldom to the clinical features of the deaf child. As a subject of scientific research the examination of the temporal bone of deaf children is interesting and valuable, but it is of little educational value. There are two reasons for this. The diseased process is a finished one, and even a complete knowledge of the pathology of deaf-mutism would not enable us to do anything to cure the deafness which causes the mutism. The disease has long ago destroyed the elements of the cochlea and we will never be able to replace them.

The second reason is that, although the deafness is due to changes in the internal ear, these are merely an outworks or by-product of a more general disease, and it is the prevention of this latter and not the study of the by-product which will help the children of the future. This is true of measles, scarlet fever, and meningitis (by far the commonest causes of acquired deafness), and it is true of syphilis, perhaps the commonest cause of congenital deafness.

Even as a department of scientific investigation this study of the temporal bone is robbed of much of its value by the fact that it is very difficult to place alongside the pathological findings the clinical history of the illness causing the deafness, or even to state whether the deafness is congenital or acquired.

Bezold's Clinical Work

Recently Bezold, of Munich, has added an interesting section to the study of the deaf-mute child. He has mapped out the islands of remaining hearing, as I have done in the chart I show you here.

Bezold was the most careful clinical investigator of the deaf child whom I have ever seen at work, and, if I could get the temporal bones of these 30 deaf children and examine them and then place the pathological findings alongside the clinical chart, I might be able to throw some light on the physiology of hearing and the pathology of deafness, though I could hardly help the deaf child. But, as these deaf-mutes are all young, healthy children and likely to outlive me, what chance have I of completing my picture?

While this kind of research certainly should go on, I appeal to the practical men in both professions to look at the living deaf child, to see what is left of his hearing and speech, to see that the most is made of his eye-sight, and, whilst aiming at acquisition of speech in as many cases as possible, to cease teaching defective deaf children by a method which is unsuitable.

If during the systematic period the doctors have done so little, what have the teachers done? Briefly stated, they have elaborated two opposing methods and made them about as perfect as human effort is likely to make them. I refer to the manual-alphabet method and to the oral method.

De l'Epee's Fallacy

De l'Epée and his successor, Sicard, did all that enthusiasm and genius could do to perfect a system of signs, and they failed. They based their system on the fallacy that signs are *the* natural language of the deaf. De l'Epée assumed that the natural or mimic language of signs was the only one in which the deaf could think or reason.

Now, signs are no more the natural language of the deaf than of the hearing, but, in the absence of speech, they are the best the untaught deaf can do in the way of finding a substitute for speech. Speech is natural to both hearing and deaf children, but the conventional forms in which it exists are not natural to either. Both have to learn these forms, and in the absence of hearing this task is very difficult; hence deaf children fall back on the easier and more primitive language of signs.

If what I am stating about the natural languages of the deaf seems to belong to academic discussion and not to practical education, I have to remind you that fallacies on this point have given definite and opposing directions to the efforts of educators for 300 years, and have produced a war of methods existing over 150 years—a war which is not yet over. Here I wish to state that speech is *a* natural language of deaf children, and that our business is, wherever possible, to assist in its development.

To talk of signs as the natural language or the mother tongue of the deaf is physiologically incorrect.

If you hearing people enter a foreign country, the language of which you do not know, you will have to sign. You will take to it as naturally as the deaf and dumb, and, if you are looking for a lost traveling-case, you will spend an hour in trying to make yourself understood and may fail in the end, although the case be lying in the back room of the agency all the time.

"Speech the Natural Language"

Ladies and gentlemen, you may have as much language as you choose, you may have as many languages as you choose, but unless you have that language which is known to the group of people around you and unless you can express that language in speech, you do not belong to their world. Signs are not *the* language of nature; they are *a* language of necessity forced on impaired or uneducated human nature.

If a child have neither sight nor hearing, he uses a more primitive language still, the language of the sense of touch—the language of a sense which existed before either eyes or ears had appeared amongst living creatures.

In talking of natural languages and mother tongues, let us be quite clear *that speech is the natural language of man.*

During the latter half of the 18th cen-

tury, when De l'Epée in France and Heinicke in Germany turned their attention to the public education of the deaf or to the education of the deaf poor, no educational arrangements existed, even for the hearing, which were at all comparable with those of our own day.

Pioneers of the "Systematic" Era

Neither De l'Epée nor Heinicke started life as teachers of the deaf. De l'Epée was first a clergyman, then a lawyer, then again a clergyman. He was nearly 50 years old when he accidentally met the two deaf children who gave him the chance of doing the great work of his life.

Heinicke was first a farmer, then a soldier, then a tutor and secretary, and, lastly, a precentor at Eppendorf, where he stayed till 1778. He, too, like De l'Epée, was by this time nearly 50 years of age. There was still no public school for the deaf. Heinicke educated one deaf boy with some success at Dresden during his soldiering period, and a few more at Eppendorf during his precentorship, and, because of his success with these, he was asked by the Elector of Hanover to come to Leipsic and found the first school for the deaf in Germany. This was in 1778.

Such were the first public-school teachers of the deaf. They had no training as such, and any help they could get was from the books written during the sporadic period by the men who had taught single, or, at most, two or three children of wealthy parentage. Neither these teachers nor their successors had any idea of the capacity of deaf children. They discovered that the average deaf child could be taught, but they had no idea of his ever taking his place in the hearing world.

Deaf children had to gather round these pioneer teachers, and, as the children were poor and the work had to be done by charity, *the institution was inevitable*. Even if the education of hearing children had been general then as it is now, even if it had been compulsory and free, as it now is in many countries, the institution for the deaf had still been inevitable, for the deaf child himself was not understood, and when the first institutions in England and America were established they called themselves asylums.

Services of the Institution

Now, in describing the institutions as inevitable and recalling their original titles as asylums, I am not condemning them. They were just what they called themselves—homes where the deaf children of the poor were clothed and educated. These asylums or institutions have done a magnificent work. Without them the deaf children of the poor could not have been educated. For 100 years they did for deaf children what must otherwise have gone undone. But they have done more. Gradually within their walls the capacity of the deaf child has come to be recognized, until now his teacher is not afraid to state that, unless the deaf child be also mentally defective, he will with time and patience make him a capable and reliable citizen—a help and not a burden to the state. *This is the great work of the institutions.* What would the deaf child of today do without the experience which the teaching of his predecessors in institutions has accumulated?

A glance at the arrangements for the education of the hearing children of the latter half of the 18th century may now be taken.

In France, where the first public school for the deaf was started, in 1760, education was in the hands of the Jesuits. When the children of 1760 had grown to be adults—say in 1790—53 per cent of the men and 73 per cent of the women could not sign their names to their marriage contracts. The teaching of hearing children was entirely in the hands of the Church, and the Church taught them nothing that had for its object the making of useful citizens. Protest was constantly made that even the French language was not taught, that history and geography were not taught, even to advanced scholars, and that education

was nothing more than the study of books filled with "vain distinctions and frivolous questions." La Challoais and Rolland, the great pre-revolutionists, had not begun to write. The essay of the former did not appear until 1763, and Rolland's report was not made until 1768.

Even at the revolution, when Mirabeau and Talleyrand laid down the principles on which the education of the child must proceed in the interests both of the individual and of the nation, practically no work had been done for the hearing children of the poor. An interesting exception to this statement may be made in the case of the schools founded by La Salle, because these were residential schools for hearing children, in which speech was repressed as much as possible and much of the teaching done by a system of signs.

In the German countries the education of hearing children was hardly better than in France. True, public instruction was considered to be an affair of the state, and education was less under the control of the Church than in France, but the results were very poor, and most of the children of these countries got no instruction at all.

When Pestalozzi, the De l'Epée of hearing children, took to teaching 15 years after the French Abbé, it was to found an asylum for poor children at Neuhof.

The English Charity Schools.

In England, where the first public school for deaf children was started in 1792, the institution for the deaf must have come, even if it had existed in no other country. The grammar school had existed for the children of gentlemen for 200 years, but it was only during the 18th century that the charity schools began to spring up.

"These latter were founded on a conception of education partly religious and partly feudal, but almost wholly ignoble and humiliating. The children were to be taught the Church catechism, reading and writing, and in a few cases arithmetic, but were to be sedulously discouraged from attempting more. They were to be clothed in a distinctive dress so as to show that they were objects of public benevolence and to remind them of their rank. There was no provision for girls in the grammar schools, but as a girl might, if poor, be needed to contribute to the comfort of her betters as an apprentice or a servant, the charity schools were open to her." Surely in England more than in any other country the institution for the deaf was inevitable.

Now I am not going at this stage to refer to the advantages or the faults of the institution system, but I wish to point out here two of its results. The deaf child had to leave his home and he had to associate outside the class-room with other deaf-mute children.

The Class-Room Hodge-Podge

The definition of the deaf-mute child was and is, not what he could do, but what he could not do. He could not be educated along with the hearing children of ordinary schools. He might be wholly or partially deaf; he might be wholly or partially mute; he might be only very hard of hearing and have perfect speech. He might be aphasic with perfect hearing—dumb but not deaf. He might be mentally defective to the verge of idiocy or he might be bright and intelligent. It did not and does not matter. Out of the home and into the institution he must go. There was nowhere else for him and there is, generally speaking, nowhere else now. So that the institution for the deaf became a kind of dumping ground for what the ordinary schools could not deal with; and in most countries it is so still.

Now such a statement needs proof; for if it is true, the condition which it describes should be altered.

If you will scan the membership of a deaf-mute class in the ordinary institution or in the ordinary day school for the deaf, you will find it composed as follows. There are ten or twelve children. One or two are semi-deaf or very hard of hearing—that is, they speak be-

cause of the remaining hearing they have; one or two are semi-mute children who speak because of the speech they have not forgotten and which they acquired during the early hearing years of their lives; one or two are mentally defective deaf children; and there are half a dozen ordinary deaf-mute children.

Now you *may* have two methods carried on in the same institution, *but you cannot have two methods carried on in the same class,* and unless it can be shown that there is one method which suits children so unlike in educational needs, a minority must suffer, and this minority is often a large one. The truth is that the semi-deaf and semi-mute should not associate with the deaf-mutes at all even in the class-room. Their habits of thought are those of the hearing child. On the other hand, the mentally defective deaf child cannot be profitably taught orally, and in any case he wastes the time of the ordinary deaf-mute child and he will never use his speech.

Examples of Classification

So some kind of classification is necessary; and in very large institutions some kind of classification is possible and occasionally is attempted. In the New York institution, for instance, I saw a class of semi-mute children, all the product of cerebro-spinal fever. At Dresden I found the children in the institution classified into A, B, and C classes, A having most of the semi-deaf and semi-mute; B, the ordinary deaf-mute children, and C, all the weak-minded children. In London all the mentally defective children are in a separate institution. In Denmark the semi-deaf and semi-mute are in one institution, whilst the mentally defective are in another.

But such arrangements are quite exceptional. The general practice is to have all kinds of deaf children in one institution or school and to have them distributed throughout all the classes. And this state of matters is getting worse. Compulsory education is sending many hitherto neglected children and medical inspection many hitherto misplaced children into the institutions for the deaf, and as many of the former are physically and mentally poor and many of the latter speak and are only very hard of hearing, the need for classification and separation is growing.

What would you think of the physician who treated all feverish complaints with an antipyretic and made no differentiation in his treatment? If influenza, smallpox, enteric fever, and diphtheria were all treated by phenacetin or antipyrin merely because the temperature is high in each, and if no directions were given about diet, or no anti-toxin used, what would become of our patients? Or if all abdominal pains were treated by purgatives without differentiation of causes, what would the death rate become?

So, if all children are to receive the same educational treatment, because they are more or less deaf and therefore cannot benefit from the classes in an elementary school, how can the best be done for them?

Clinical Examination an Aid to Classification

As an example of how clinical examination makes for correct classification and for more efficient education, I might instance the recently formed classes for the semi-deaf and semi-mute in Glasgow. As I have dealt with this school in a recent paper, I mention it now only to state that it has just been extended, that there are forty children on the roll and that it continues to receive children who have been in ordinary schools and in schools for the mentally defective, but who have failed to make progress on account of deafness.

A more recent example I take from Bristol, England. In describing a class there which started on the 11th of this month, the secretary of the Bristol Education Committee, writing on the 4th inst., states: "There will probably be about 10 or 12 children in attendance. Some of them will be children now at

the deaf institution who are semi-deaf but have a certain amount of spoken language, and a few others will be children who are now attending our special school for defective children but whose backwardness is thought to be due to deafness rather than to mental deficiency." But the most interesting illustration I can give you is from London, where another class for hard-of-hearing children is being started this month, and I am indebted to Dr. McLeod Yearsley, aurist to the London County Council Schools, for the following figures contained in a letter dated April 4:

"Since January 18, 1910, I have once a week attended at the head office examining children sent up to me as deaf. The results are as follows:

"Fit for ordinary schools	87
"Fit for ordinary schools, front row	43
"Hard of hearing	34
"Deaf school	36
"Mentally defective	8
"Total number examined	208"

These figures might be made to point to various conclusions. The one of interest to us here is that clinical examination is essential to any correct placing of deaf children. All of the children were sent up to the specialist by teacher or doctor as deaf, and only a bare majority had any considerable deafness at all.

Disposition of the Classes

I must now revert to an aspect of the subject which I have postponed until the question of classification had been considered.

Is there anything about an ordinary deaf-mute child which makes it necessary or even advisable to remove him from his home and educate him in an institution? I have already answered this question so far as it applies to the semi-deaf and semi-mute by saying that he should not associate with the deaf and dumb at all. I shall now answer it for the mentally defective deaf child by saying that there is good reason for removing him from his home and educating him apart, and I would extend his period of residence in some kind of institution to the end of his life, for two reasons:

1. He will never be self-supporting.
2. If you let him out he will beget other mentally defective children.

Value of Home Training

The question is thus simplified or narrowed down to this—*Should the ordinary deaf-mute—subject of what I have called surdism—the child who is so deaf that he is also dumb—be removed from his home, and merely because of his deafness be made to associate with other deaf children during the whole of his waking hours?* To this question I answer NO. Such a child should attend a day school for deaf children, and when his school work is over he should go home, or if his home be too far off, he should be boarded out in a selected household near the school. This plan preserves the family life of the deaf child, or where this must be broken, supplies the best substitute. Further, it gives the orally taught deaf child the best chance of practicing what he has been taught in class. Outside the class-room he is in a world where he is induced to use all the speech he has. On this subject I quote Hartmann:

"It must be said that the influence of parental love upon the mind, the morals and the character of the child living at home is a boon for which no substitute can be found in an institution. In this respect all children, deaf-mutes as well as others, are situated alike, and I consider the influence of the family life upon the child of such importance that for this reason alone I would prefer a good school to which deaf-mute children, living at home, may be sent, to a large institution in which the children reside and are trained by their teachers."

INSTEAD THEREFORE OF DEAFNESS BEING A REASON FOR SENDING A CHILD TO AN INSTITUTION IT IS PHYSIOLOGICALLY A REASON FOR KEEPING HIM OUT OF AN INSTITUTION. The massing of deaf children tends to make them a race apart and during their most receptive period deprives them of that contact with the

world which is really an essential part of education. Within recent years Education Committees have taken in hand the feeding, bathing, clothing and drilling of hearing children, and if these committees will do all this for deaf children it will no longer be necessary to mass them together in institutions.

A Tentative Forecast

I have told you that I believe we have entered the third period in the education of the deaf child—the clinical period. The great feature of this period will be the classification of deaf children on a clinical basis. It will involve both an extension of and a limitation of oralism. Where oralism is taught at all it will be taught thoroughly and unmixed. The period will also see an extension of the day-school system and the restoration of most deaf children to family life, and it will see a larger number of the deaf than heretofore removed from the smaller world of the deaf and dumb and placed in the greater world of the hearing as capable and helpful citizens. Two great legislative movements—the free and compulsory education of deaf children and the medical inspection of school children—have made for the inauguration of this clinical period.

The changes I have outlined can only happen gradually, and, if there be undue haste, mistakes are sure to be made. Graser's mistake of the third decade of the nineteenth century is likely to be repeated; deaf children will, after a short mechanical training in the elements of speech, be put into ordinary classes with hearing children and taught by teachers who are not fully qualified in this special branch of work. Graser's system failed and must always fail. Not only does the deaf child need special training for the full school period of ten or twelve years, but the teacher must be fully equipped for this special work. Then the classes must be so small that the teacher is able to devote time to each individual child. With these precautions the success of the day-school for the deaf is assured, and the cost will be little over half that of the institution system.

It having been ascertained that a child is, or has become, deaf, when should his education begin? My answer is, as soon as the discovery is made. And, in a young deaf child, the first teacher should be the child's mother.

That is the case with hearing children. The teacher of the hearing child finds much of the spade-work done. The mother has taught the child to speak, and the acquired and understood vocabulary gives the teacher something which he can use at once in getting educational advancement.

But the mother of the deaf child has been able to do nothing for the child. In the case of the hearing child the mother's work is so nearly perfect in speech-reading that all the teacher has to do is to correct some baby language in which perhaps the mother took a silent pride, but in the deaf child there is not even the skeleton of words, and, although the instinct to speak be present, there is no speech habit.

The British N. A. T. D. Circular

I see that the National Association of Teachers of the Deaf in Britain has issued a circular* to parents and guardians of deaf children, which attempts to guide the mother in creating or perpetuating the speech habit. Were the mother of the deaf child invited to visit periodically the school for the deaf and to see the teacher at work, I think the deaf child might arrive at school, say at five years, much better prepared for the work of the class than he is at present. The instinct to speak might be made to become a speech habit and, although the articulation might be faulty or the results unrecognizable, the mistake could be corrected like the baby speech of the hearing child. If you will study the circular to parents you will see what a difficult task is set to the mother of a little deaf child, and how much she needs the help which can only be given by watching the skilled teacher do the difficult work (see page 2 of circular). You who teach the deaf to speak know how difficult this work is. I

* See circular, page 153, of this issue.

entirely approve of this circular to parents as a guide to mothers who would have their children speak, but without some practical help the mother will make no use of it.

How is this practical help to be given? By following the mother's plan with the hearing child. From the earliest months the mother trains the child to look to her face, and especially her mouth, for meaning. If the deaf child's mother only knew a little of how it was done in the oral schools she might train her child to look to her face, and especially to her lips, for that which even without sound is speech. The circular I refer to indicates the way. To make the teaching of the circular effective two things are necessary.

Practical Suggestions

1. The notification of the occurrence of great deafness or of the discovery of great deafness in a young child. The health visitors of the sanitary authorities might here co-operate with the school board or education committee.

2. The opening of the day schools for the deaf to the mothers of the little deaf children on one day in the month so that they may have some instruction in the cultivation of the speech habit in the little children who in two or three years must become the pupils in these schools. Should this plan not succeed, nursery schools for little deaf children should be formed and mothers encouraged to witness the teaching.

If oral methods are to succeed fully they must begin early. Could you keep a hearing child from starting speech till the age of five years, I do not think the development of speech or even of language would be rapid or satisfactory, and I cannot but believe that neglecting the speech habit in deaf children till they are 8, 7, 6, or even 5 years of age is a grave mistake.

On the other hand, the removal of little deaf children from the home at 2 and 3 years of age is a practice I cannot recommend.

I now quote from a letter sent me by an eminent English teacher of the deaf, Mr. Story: "In my opinion the failure of oral teaching is, in the majority of cases, because it was begun too late. Five years even is not early enough in life for full oral success." "The work should begin at five months, rather, by the mother talking to the child and setting up the idea of looking to the mouth for meaning. The mothers must be the first teachers if oral work is to succeed."

If Mr. Story is correct we must give the mothers some practical help in the doing of this difficult work.

In order to focus attention on and to facilitate discussion of the chief points raised in this paper, they may be expressed in these propositions.

Final Conclusions

(1) The education of deaf children without previous clinical examination and classification is wasteful and inefficient.

(2) The massing of deaf children in institutions should be avoided except in the case of the mentally defective deaf. Necessitous deaf children should be fed, clad, and, where necessary, boarded out at the expense of the educational authorities. In these respects they need the same treatment as necessitous hearing children.

(3) The education, but not the instruction, of deaf children should begin as soon as the fact of deafness is known, and the mothers should be the first teachers. Unless the speech habit be acquired before the age of five years the best oral results can seldom be got.

If the physician and the teacher are to co-operate in the work of educating the deaf child, there must be not only medical inspection of all school children, but there must be a specialist attached to every school or institution for the education of the deaf.

The best man for this work is the aural surgeon, and even the aural surgeon must study the deaf child long and carefully before he can understand this strange creature without hearing, without speech; this half animal, half god, who

by education may be made a man, with no evidence of that which stamps man more than anything as higher than the lower animals—the power to receive and communicate his thoughts. But as year after year he sees further into the patient, waiting spirit, and as year after year he sees this spirit set free, he will be rewarded by the highest that is given to our profession—love: not mere pity, but an intelligent and helpful love for these little ones who cannot help themselves. Thus will the physician share a privilege which has been too long the exclusive possession of the teacher of the deaf.

In connection with the above paper, Dr. Love made public the following letter from Helen Keller:

WRENTHAM, MASS., *March* 31, 1910.

MY DEAR DR. LOVE: I am glad that the physicians who meet in Washington are to consider the deaf child. Surely much good will result from a conference between teachers who have to deal with the deaf child as a pupil and physicians who understand the pathology of deafness. It will be a great step forward when the physician takes part in the work for defectives who have hitherto been entrusted wholly to teachers in schools.

I have heard of children who were under medical treatment and who were allowed to remain in ignorance for years; that is, the doctor tried to do something for the diseased organ, but he gave the parents no practical advice about the deaf child. I have received letters from the parents of children who were either deaf or feeble-minded, the parents could not say which. The doctor did not know, or else he did not tell them the truth.

I do not wish to complain of the great brotherhood of physicians. I believe with Stevenson that a physician "is the flower of our civilization." We look to him not only to alleviate blindness and deafness, but also to teach us how to prevent these dark infirmities. Now we greatly need information gained by unbiased scientific study of the deaf child, and we are asking that the physician tell the public the truth; that is, as much truth as they know.

As you say, most of my little work has been done for the blind. But that is largely an accident. Workers for the sightless have asked me to help them, and have given me many opportunities to say a word on their behalf. Perhaps the reason that I have done little or nothing for the deaf is, I am not competent. I hardly know where to take hold of their work. But I am deeply interested in them. I am just as deaf as I am blind. The problems of deafness are deeper and more complex, if not more important, than those of blindness. Deafness is a much worse misfortune, for it means the loss of the most vital stimulus—the sound of the voice, that brings language, sets thought astir, and keeps us in the intellectual company of man.

Faithfully yours,

HELEN KELLER.

"CIRCULAR TO PARENTS

RESPECTING THE EDUCATION AND MANAGEMENT OF DEAF CHILDREN," PUBLISHED BY THE BRITISH NATIONAL ASSOCIATION OF TEACHERS OF THE DEAF (QUOTED IN PART).

Before School Life

It is of the utmost importance that the child should be properly trained at home, if it is going to profit fully by the education given at school.

He or she should neither be petted nor spoiled, nor severely treated.

He should be taught from the earliest age—

To keep himself clean and tidy;

To obey cheerfully;

To help in the household;

To take care of his toys;

To have a proper respect for the property and feelings of others; and generally to *behave nicely*.

The common opinion that deaf children are naturally more bad-tempered than others *is wrong*. Where very bad temper is found in a deaf child it is often the result of bad training at home.

Parents and friends can do much to *prepare* the child for school life.

1. Most deaf children are now taught at school to speak, and to understand the speech

of others by watching their lips; therefore, teach him *to look at you* while you speak to him. By constantly looking at you, he will learn to understand a great deal of what you are saying. When you give him bread, repeat the word several times, and make him look before he gets the bread. In a similar manner teach him to recognize on your lips common words like "mama," "dada," "baby," "yes," "no," "come here," "shut the door," etc. *Talk to the child* all the time! This will be a great help to his teacher, when the child goes to school.

2. Let the child learn to write and draw on slate or paper. Teach him to write, first the letters, a, b, c, d, etc., then his own name, the names of his brothers, sisters, the names of common objects, "ball," "doll," "cat," and to point to the object named.

3. If the child *can hear* a little, or *has heard* and has recently lost his hearing from measles, or other cause, it is all the more necessary to *speak constantly* to him.

If he can speak, insist on his speaking clearly, and asking aloud for everything he needs, or *he will lose the speech he has.*

Children who have learned to speak and afterwards become deaf can be taught to understand everything that is said to them from the lips, and *need not become dumb* unless those around them are careless about *making them speak.*

During School Life

When the deaf child goes to school, parents and friends can assist the teachers by taking an interest in the child's lessons, by teaching him the names of persons, things, and places around him; by speaking as much as possible, and by discouraging *"signing."* If a word or a sentence is not understood by speech it may be written; or spelled on the fingers, if that method is taught at the school the child attends.

The greatest difficulty a deaf-child has in life is to understand the English language; therefore the parent should encourage the child to use language as much as possible. If he asks in signs for a thing teach him to ask for it in words, write it down, and make him learn it.

After School Life

Keep up his *speech.*
Make him use *language!*
Encourage him to *read!*

Find him work, at a definite trade, as soon as he leaves school. The Headmaster in your district will help in this matter, if asked.

Insist on his going regularly and punctually to work, as habits of laziness, if once formed, soon render anyone unfit for regular work.

With proper training and education a deaf child should become a thoroughly intelligent, respectable, and self-supporting member of society.

GIROLAMO CARDANO (1501–1576)

Who discovered the moving principle in the instruction of the deaf; namely, that ideas can be associated directly with words without the intervention of sound
Illustration from an engraving by Gio. Pavesi

NOTES OF EARLY LIFE*

FROM THE NOTE-BOOK OF ALEXANDER GRAHAM BELL

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I

MY FIRST INVENTION

WHEN I was a school-boy my father had a pupil, Benjamin Herdman, who was of about my own age. We became intimate and used to spend a good deal of time together. Benjamin's father owned a large flour-mill, known as Bell's Mills, near Edinburgh. I was at the mills a good deal with my friend Benjamin, and, as boys will do, we were constantly getting into mischief.

"Do Something Useful"

One day Benjamin's father called us into his office and gave us a good talking to. He wound up with the words, "Now, boys, why don't you do something useful?" I mildly asked him what we could do. It seems that at the moment his mind was occupied with some problem concerning his mill, and he picked up a handful of wheat and said, "If you could only take the husks off this wheat you would be of some help."

I said nothing at the time, but began to wonder whether some machine could not be devised that would remove the husks from the grains of wheat before milling. It seemed to me that brushing would accomplish this, so, through Benjamin Herdman, I quietly procured a sample of wheat and began to make experiments. I found no difficulty, by diligent application of a nail-brush, in cleaning the wheat as desired.

It then occurred to me that at Bell's Mills they already had a rotating machine, used for other purposes, that should do the business. By dumping the wheat into this machine it would be paddled round and would be thrown against the circumference of the machine, which was provided with brushes or something rough that I thought would clean the wheat as thoroughly as the nail-brush had done.

Armed with the sample of wheat I had cleaned, Benjamin and I repaired to Mr. Herdman's office and explained the idea to him. He seemed struck with the idea and immediately ordered the experiment to be tried. It turned out to be a success, and I have the impression that this method of cleaning wheat was permanently adopted in Bell's Mills.

The Herdmans subsequently acquired the Haymarket Mills, in Edinburgh, which still belong to the family. Mr. John Herdman, a son of the old gentleman (who is no longer living), remembers the experiment, and can tell better than I what practical results ensued.

So far as I remember, Mr. Herdman's injunction to "do something useful" was my first incentive to invention, and the method of cleaning wheat the first fruits.

II

JUVENILE RESEARCH

School-boys are often fond of societies and secret associations with pass-words and grips, and I was no exception. In addition to founding the great "Frab" society, modeled upon Free Masonry, I also founded "The Society for the Promotion of Fine Arts among Boys."

There was no difficulty in obtaining members, so long as every member was an officer of the society. We had a president, vice-president, etc., and professors, but no common members. My brother Edward was professor of drawing and I was professor of anatomy. It seems rather strange at the present time that anatomy should have been included among the fine arts, but we boys saw nothing incongruous in the Association.

I was honored with this special distinction from the fact that I was fond of

* This and the succeeding extracts are copied from "Dictated Notes," 1906, pp. 32-57.

examining the insides of all the dead animals I could come across. I had quite a collection of skeletons of small animals cleaned by myself, chiefly birds, but also including the higher mammals, like rats and mice! In the case of larger animals, like cats, I preserved the skulls only. My father encouraged me in making collections of various sorts, and helped me to arrange my specimens in some sort of order, which I supposed to be scientific.

I commenced with plants, and was encouraged by my father to arrange them according to the Linnean system of botany. Then I took up birds' eggs, and was allowed by my father to collect them, providing I took only one from a nest and did not leave the nest empty. In time I had quite a collection of eggs, and made experiments in substituting the eggs of one bird for those of another in a nest. I placed a thrush's egg in a small bird's nest in our garden at Milton Cottage, but the young thrush when hatched took up so much room that he shoved out the other birds.

Then my fancy turned to anatomy and collecting the skeletons of birds. On one occasion my father presented me with a dead sucking pig, and the distinguished professor of anatomy was called upon for a lecture. So a special meeting of "The Society for the Promotion of Fine Arts among Boys" was held in my study, the attic of my father's house (13 South Charlotte Street, Edinburgh). This was sacred to me, and there my collections presented an imposing array of anatomical specimens.

Some boards were arranged as seats for the members of the society. On a table in the middle lay the defunct sucking pig. It was a great moment when I started to thrust my knife into the abdomen of the subject for dissection. But, unfortunately, there happened to be some air in the creature, so that the knife thrust was followed by a rumbling sound that resembled a groan, with the result that we thought the creature alive.

Horror-stricken I rushed from the room, followed by all the boys. We tumbled over one another in our eagerness to get downstairs. Each boy fled to his home, and none returned to hear the lecture. Even the lecturer himself was too frightened to revisit the lecture-hall. My father was obliged to go upstairs and take charge of the corpse; I never saw it again.

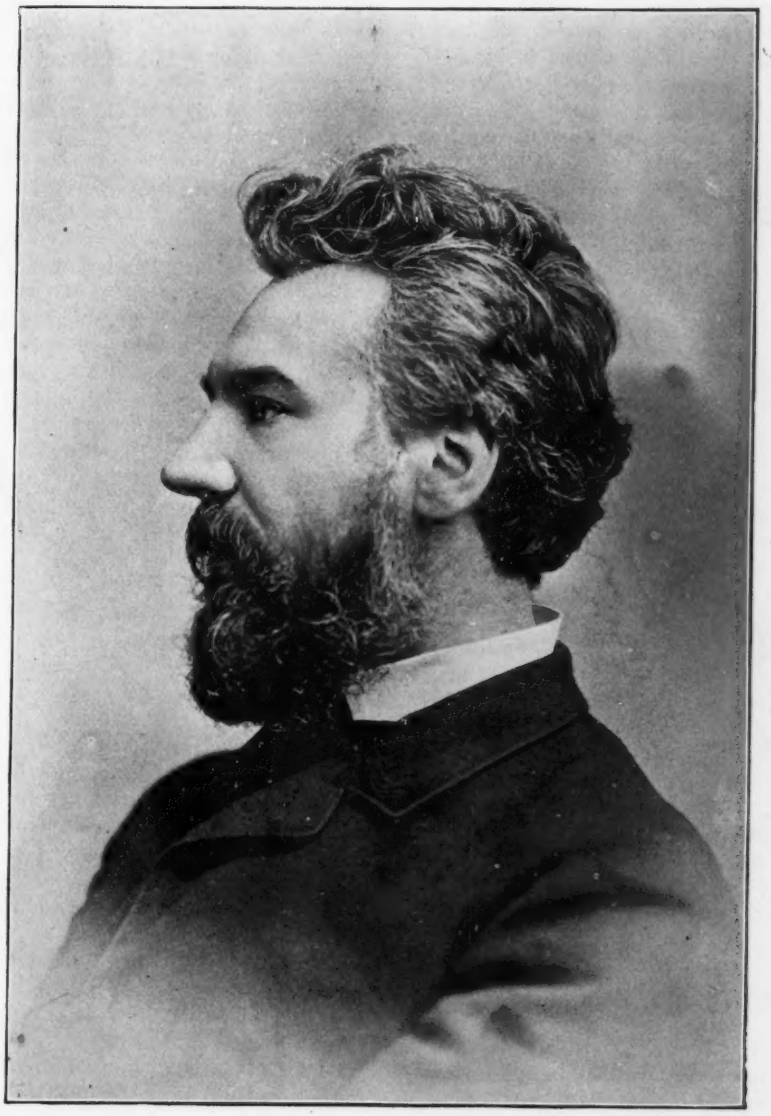
III

TEACHING A DOG TO TALK

When I was a young man, about twenty years of age, I became much interested in the great diversity in the size and shape of the mouths of my father's stammering pupils, and began to study the vocal organs of persons who had no defects of speech. A similar diversity was observable here, and I began to wonder whether the mouth of such an animal as a dog would be capable of producing articulate sounds. We had a very intelligent skye terrier, and upon this creature I began to make experiments.

I found little difficulty in teaching the dog to growl at command. His food supply was limited and he soon became delighted to growl for food. He would sit up on his hind legs and growl continuously until I motioned him to stop. He was then rewarded with a morsel of food. I then attempted to manipulate his mouth. Taking his muzzle in my hand, I caused his lips to close and open a number of times in succession while he growled. In this way he gave utterance to the syllables "ma, ma, ma." He soon learned to stop growling the moment I released his mouth, in anticipation of the expected reward (which was never withheld). After a little practice I was able to make him say, with perfect distinctness, the word "mamma," pronounced in the English way, with the accent on the second syllable.

I then placed my thumb under his lower jaw, between the bones, and, pushing up a number of times in succession, I caused the dog to pronounce the syllables "ga, ga, ga." By pushing up the thumb once, and then constricting his muzzle twice in succession, he gave utter-



ALEXANDER GRAHAM BELL, A. M., M. D., Sc. D., PH. D., LL. D.

Founder of the Volta Bureau; Former President of This Association, and of the National Geographic Society; Regent of the Smithsonian Institution; Officer of the Legion of Honor (of France), etc., etc., etc. Inventor of the Telephone, the Tetrahedral Kite, the Photophone, Induction Balance, and Telephonic Probe; Co-Inventor of the Graphophone, etc.

"The Note-Book of Alexander Graham Bell" Begins in This Number of THE VOLTA REVIEW, and Will Continue Monthly.

ance to "ga, ma, ma." By practice this was made to resemble, in a ludicrous degree, the word "grandmamma" (pronounced ga-ma-ma). A double reward followed this result, and the dog became quite fond of his articulation lessons.

The dog's mouth proved to be too small to enable me to manipulate other parts of his tongue, and I had to content myself chiefly with labial effects. By careful manipulation of the muzzle we obtained a sound that passed for "ah," and, by finishing off the "ah" sound with a final "oo," we obtained a diphthongal vowel that passed for "ow" (as in the word "now"). The culmination of his linguistic education was reached when the dog was able to say in an intelligible manner the complete sentence, "How are you, grandmamma?" (pronounced "ow ah oo, ga-ma-ma").

The fame of the dog spread among my father's friends, and many were the visitors who came to the house for the express purpose of seeing this dog sit up on his hind legs and, with a little assistance from my hand, growl forth the words, "How are you, grandmamma?" Indeed, his fame grew to such an extent that reports frequently reached me of success in articulation utterly unwarranted by the facts. I made many attempts, though without success, to cause him to produce the effects without manipulation. He took a bread-and-butter interest in the experiments, but was never able, alone, to do anything but growl.

IV

LIFE WITH MY GRANDFATHER

After finishing my course at the Royal High School of Edinburgh, when I was about fourteen years of age I went to London to live with my grandfather, Alexander Bell, professor of elocution. He resided alone, at No. 18 Harrington Square, and I stayed with him for about one year.

This period of my life, as I look back at it, was the turning point of my whole career. It converted me from a boy into a man, somewhat prematurely. It made me ashamed of my educational status—which was by no means high—and stirred up in me the ambition to remedy my educational limitations by my own exertions.

Early Education.

My early education had been carried on upon the classical model, and I am afraid that I did not do justice to my excellent teacher, Dr. Donaldson, who is still living, as the president of St. Andrew's University. For Latin and Greek, as taught in the school, I felt no taste. I was fairly interested in arithmetic, but, although I understood and mastered its processes, I was very inaccurate in my computations. I would know how to do a thing, but often got the answer wrong. I was quite fond of puzzling questions in proportion, and found little difficulty in that most difficult part of the problem, stating the proportion properly; but I found it a very different thing to work out the answer without error.

My natural bent was toward nature study, but this formed no part of the curriculum at school. I actually obtained by my own exertions, with the encouragement of my father, a fair knowledge of the Linnean system of botany when I was a small boy. In the same way I studied zoölogy by myself, although I presume that my father must have helped me, at least in acquiring the names of the natural orders of animals. My interest in reading was divided between fairy tales and anecdotes of animals.

Unfortunately, neither botany, zoölogy, nor anatomy, nor any of the subjects in which I naturally felt an interest, were taught to me in school. I fairly hated Latin and Greek, to which great time and attention were given, and it seems strange to me now, considering my low standard in these subjects at school, that sufficient Latin and Greek were stuffed down my throat, so to speak, as to have been of inestimable value to me in understanding the etymology of the English language, and in giving me a key to the barbarous language of science, in which the terms are largely of classical origin.

I was a fairly good speller, as a boy, and was fond of English composition, especially in the form of verse.

Indeed, I considered myself as something of a poet. My themes were taken from nature, generally referring to birds and animals. There was another boy at the high school, of the name of Weightman, I think, who was also addicted to verse. We were looked upon as the class poets, and on two or three occasions we had the honor of declaiming our compositions before the class. The accomplishment of versification was, I think, the only subject in which I distinguished myself at school. In reading or declaiming I stood fairly well in the class, but in all other subjects, especially in Latin and Greek, I took a low rank.

An Old Man's Companion

However, in spite of my disqualifications, I passed through the whole curriculum of the Royal High School, from the lowest to the highest class, and graduated, but by no means with honors, when I was about fourteen years of age. Then the visit to my grandfather took place. I was cut off from all association with young people and lived alone, with an old man, for a year. We became companions and friends. My grandfather made me study by myself, and gave me daily lessons in elocution and declamation. I read through a number of Shakespeare's plays with him, and he made me commit to memory the most famous passages from "Hamlet," "Julius Cæsar," and other plays.

When I reached London my grandfather was somewhat disappointed with my appearance, not with that of my person, but with that of my clothes. My father and mother had been careful that I should be properly dressed in Edinburgh, but, as they had an idea that city life was bad for children, and that growing boys should have plenty of fresh air, exercise, and freedom, impracticable in dignified Edinburgh, they had provided a country place at Trinity, where they novels and take to study. I formed a turned me loose in old clothes for at least two days in the week.

"Milton Cottage," at Trinity, was my real home in childhood. There were always restraints against which children rebelled, in the Edinburgh life of South Charlotte Street. One of the greatest discomforts to us boys was the necessity of appearing properly dressed. My parents had taken great care in this respect, and it was as mortifying to them as to me to find that my grandfather disapproved of my best Edinburgh clothes.

A Sartorial Re-birth

Grandfather had me completely under his control from the time when my father brought me to London. The moment my father left for Edinburgh my grandfather sent for a fashionable tailor, and I soon found myself converted into a regular dude, resembling a tailor's picture plate of an Eton school-boy. My coat or jacket resembled the swallow-tail coat of today, with the tails cut off. I was obliged to wear kid gloves—a novelty, indeed, to me—and, to cap the whole, I wore a tall silk hat, and carried in my hand a little cane.

I never had any young companions in London, but I was daily turned out alone in Harrington Square Garden, where I remained for an hour or so, sauntering up and down, feeling like a fish out of water and suspecting that the passers-by on the public pavement were laughing at my appearance. I was never allowed to go out of doors without gloves, my tall silk hat, and my little cane. My grandfather impressed upon me the principle that I should never appear outside, in the public streets, unless dressed as a gentleman.

Effects of the London Sojourn

My life with my grandfather made me a studious and thoughtful lad, somewhat disinclined to associate with persons of my own age. From that time forth my intimates were men, rather than boys, and I came to be looked upon as older than I really was.

The shame regarding my ignorance made me throw aside fairy tales and plan for my own education, hoping to fit myself some day to go to college and take

a degree. Of this educational plan I shall speak later, as it formed the basis of whatever real education I possess, for I never attended college, except to take a few courses of lectures, and had no further formal education from others, save the year I spent in Elgin as a pupil teacher.

My father made me an allowance of pocket money, which I was free to spend as I chose. My grandfather never interfered with me, and I was thrown upon my own resources. In this way the spirit of independence arose in me, and, when I returned home, at about the age of fifteen, I chafed at the restraints of home life. I was treated as a boy again, when I had come to consider myself a man. I received no allowance after my return to Edinburgh, and all the money I spent was obtained upon request only.

My brother Melville's frame of mind was similar to my own. Although we had a good home and most enlightened care from our parents, we were dissatisfied with home restraints and longed to be independent. On one occasion, when I was between fifteen and sixteen, I determined to run away from home and go to sea. My clothes were packed and I had fixed the hour of my departure for Leith, where I expected to stowaway on a vessel. But better thought prevailed, and, at the last moment, I gave up the project. Then I began to search the newspapers for advertisements of positions that could be filled by one of my age.

The First Position.

Thus I found that a pupil-teacher was wanted at Weston House Academy, in Elgin, Morayshire. My brother Melville and I both answered the advertisement, simply signing our name as "brothers," and giving our father's name for reference. The advertiser, Mr. Skinner, turned out to have been a former pupil of my father, so he set himself in communication at once, and my father discovered how deeply interested were Melville and I in becoming independent. It was arranged that my father should send Melville to Edinburgh University for one year, while I was to go to Elgin as a pupil-teacher, receiving a salary of ten pounds a year and board, besides instruction in Latin and Greek from Mr. Skinner, to fit me for the University.

Thus I became a pupil-teacher at Elgin at the age of sixteen. Several of my pupils were older than I, but, as I looked so much older than I really was, they never found it out.

What Does Little Birdie Say?

What does little birdie say,
In her nest at peep of day?
"Let me fly," says little birdie;
"Mother, let me fly away."

"Birdie, rest a little longer,
Till the little wings are stronger."
So she rests a little longer.
Then she flies away.

SPEECH-READING *

"SPEECH-READING IS NOT TO BE TAUGHT BUT ONLY TO BE PRACTISED—AN ART BASED ON A SYNTHESIS, NOT AN ANALYSIS OF THE SINGLE MOVEMENTS OF THE VOCAL ORGANS"

BY GIULIO FERRERI

Director of the National Institution of Deaf-Mutes, of Milan, Italy, and of the Jerome Cardan Normal School

NO one can doubt of the importance of speech-reading for the deaf, whether in regard to the learning of spoken language as a means of communication between teacher and pupil, or in regard to the social life of the deaf. If there can be any discussion today on this subject it would be, I think, in order to determine, 1, whether speech-reading is really an art which can be taught by special rules and precepts; 2, or whether the deaf should acquire it solely as an exercise of personal observation.

The abundant literature we possess on speech-reading, from Deschamps to Van Pragh or Bélanger (I omit, for the sake of brevity, the multitude of German publications on the subject), seems to speak in favor of the latter opinion. I shall leave aside the writings of the teachers "*de re*" and examine instead the observations of other writers who are not specialists of our art. It has too often happened that the educators of the deaf, having withdrawn themselves from the world, have come to believe that they possess a mysterious art which must be jealously guarded from the public gaze. The consequences of this unfortunate isolation constituted, in my opinion, the principal cause of the slowness with which the educational work for the deaf has been recognized as useful to the public. The modern school, if it does not wish to remain one-sided, following traditions contrary to the spirit of the times, must free itself from the prejudice that the opinions of outsiders are dangerous and injurious.

To return to the subject, I have found that the general opinion of those outsiders who have observed the phenomena is decidedly that the deaf learn speech-reading by a sort of auto-instruction, and that in reality rules cannot be given for acquiring the ability.

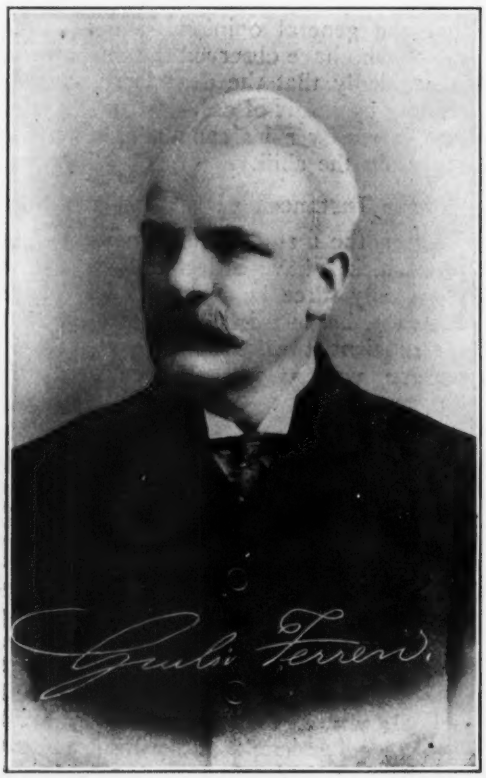
Three Instances of Speech-Reading

From the many writings on this subject which I have collected I will quote from only three in evidence (which are ancient), because it seems to me that it is sufficient to demonstrate that their opinion was afterwards confirmed by the experience of the teachers of the deaf, as well as by that of the experimental psychologists from Wundt down. My selection of this evidence is also justified by the fact that it refers to all the typical cases of speech-reading, *i. e.*, 1, to the educated deaf; 2, to adult persons who have become deaf or hard of hearing; 3, to deaf children previous to the school age.

I. Sir Kenelm Digby, one of the first expositors of the results of the Spanish school, wrote, in 1628: "The Spanish deaf speaker could discern in another whether he spoke shrill, or low; and he would repeat after any body, any hard word whatsoever. Which our Prince tried often, not only in English, but by making some Welshmen that served his Highness, speak words of their language. Which he so perfectly echoed, that I confess I wondered more at that than at all the rest. And his master himself would acknowledge that the rules of his art reached not to produce that effect with any certainty, and therefore con-

* Translated by the author from his monograph, "La Lecture Labiale," in the Bulletin International de l'Enseignement des Sourds-Muets.

cluded this in him must spring from other rules he had framed unto himself, out of his own attentive observation; which the advantage that nature had justly given him in the sharpness of his other senses, to supply the want of this, endowed him with an ability and sagacity to do, beyond any other man that had his hearing.



"He expressed it (surely) in a high measure, by his so exact imitation of the Welsh pronunciation; for that tongue (like the Hebrew) employeth much the guttural letters; and the motions of that part which frameth them, cannot be seen nor judged by the eye; otherwise than *by the effect they may haply make by consent in the other parts of the mouth, exposed to view;* for the knowledge he had, of what they said, sprang from his observing the motions they made, so that he could converse currently in the light, though they he talked with whispered ever so softly. And I have seen him at the distance of a large chamber's breadth, say words after one that I standing close by the speaker could not hear a syllable of. But if he were in the dark, or if one turned his face out of his sight, he was capable of nothing one said."

A Self-Taught Lip-Reader

II. Father Gaspar Schott (a Jesuit), in his "*Physica Curiosa* (1667), wrote: "Nature compensates for the lack of hearing in many, as they succeed in understanding what is said by watching the movements of the lips, and in answering questions which are made to them in a low voice. I have known in Sicily a learned man of our Society (Jesuit) who was entirely deaf, and yet could speak readily of any matter either with his companions or with strangers, even although he could not hear a word; but it was sufficient for him to see the movements of the lips of the speakers.

"I had also had an experience of this same phenomenon with another one, with whom I conversed at length without uttering a word, but merely by means of the movements of the tongue and lips. The same thing was observed in the case of Father Paul Layman, a man as pious as he was learned, who had lost almost entirely the sense of hearing by the sudden bursting of a bronze gun, which burst near his ears, during a procession. From that time he learned, by close observation of the mouth of the speaker, to understand by means of sight that which it was no longer possible for him to understand by hearing. Similar cases have also occurred here and there."

"Reconstructed" Speech

III. Dr. Gilbert Burnet, afterwards Bishop of Salisbury, when traveling, in 1685-'86, in Germany, Switzerland, and Italy, met by chance, in Geneva, a girl of 16 years of age who had become deaf after she had learned the first language of infancy. He wrote of this case, in a letter from Rome, and made observa-

tions as to the presumable causes of deafness acquired in early infancy. He said, among other things: "When the child was two years old her parents noticed that she had lost her hearing, and that she had become so deaf as not to hear a syllable of what was said, nor even to hear loud noises. * * * But the girl, by *watching the movements of the mouth and lips* of others, had learned enough words to form a kind of jargon, by means of which she could talk all day long with those who could understand her own language. * * * She, however, could not understand anything of what was said if she did not see the movements of the mouth of the speaker, so that, if it were necessary to speak to her in the night, it would be necessary to light a candle."[1]

From the documents referred to, it is evidently the opinion of those who first observed the phenomenon of speech-reading that it did not require any direct teaching, but that it resulted from the individual activity of the deaf-mute, who, solely by close observation of the movements of lips, accustomed himself to understand what the speaker said from his lips.

Unity, Phonetic and Optic

The testimony of Sir Kenelm includes also a valuable observation, in that it places in evidence the fact that speech-reading is rendered possible, not only from the movements of the vocal organs, but also by the concomitance of the other parts of the body. This circumstance has a scientific reason of great importance for our schools, and it has not received all the attention which it merits.

In fact, if we now consider the opinion of the educators of the deaf, who consider speech-reading as the result of their teaching, we are aware of a serious error into which they have fallen. It is a misunderstanding which may be compared, as to its identity and its consequences, with the teaching of pronunciation. At first it was believed that the deaf-mute, when he had learned to emit single syllabic sounds, would be able at once to pronounce words and to speak intelligibly and easily. It is, however, one thing to pronounce syllables, but quite another to pronounce isolated words, and still another to speak fluently. We became aware of this difference only when we discovered what a difference there was between the pronunciation of the first course of articulation and that of the pupils of our highest classes.[2]

But now the same thing has happened with speech-reading. Can one say of the deaf person who has learned simultaneously to pronounce isolated sounds and to read them from the lips that he has acquired the ability to read speech? The reply must be in the negative, and teachers who are so deluded as to believe that they can reply in the affirmative do not observe that in demonstrating the justice of their assertion they do nothing else than make their pupils read sounds and isolated words, instead of sentences, propositions, and conversations. Hence the alteration of the images which should be offered to the eye of the deaf with phonetic unity and also with optic unity, resulting from the approach, cohesion, and fusion of the movements of the single phonetics, and from the reciprocal mechanical influences of the various parts of the vocal organ.

Exaggerating Speech-Formations

I will not speak of those teachers who, in order to facilitate the speech-reading of their pupils, indicate to them the point of articulation and of sound (confusing in this way a didactic expedient for teaching articulation with a means which is anti-esthetic, false, and injurious for speech-reading), but I will mention the fact that some teachers are in the habit of exaggerating in a frightful manner

[1] See Rassegna della Educazione dei Sordomuti, Napoli, 1902, p. 60, where I have referred to the letter of Burnet.

[2] I will not explain more particularly the causes of this difference, as I should only repeat what I said in 1892 at the Congress of Genoa (*Atti*, page 105), and which form today the argument of the more recent literature in Germany on this special subject.

the movements of the lips and tongue, in order to show their pupils' ability in speech-reading. I have always in mind the unprejudiced explanation which was given me one day by an old colleague, who at that time was the private instructor of a deaf youth: "They say he reads very little from the lips, but *we*, as you are aware, know how to make them read very easily from the lips." The poor man did not realize that in confessing his own ignorance he explained the cause and motive of his pupil's.

Origin of Facial Mimicry

I think, therefore, that I do not exaggerate in saying that we should attribute to our anxiety to make our pupils read speech at any cost that facial mimicry which is impressed by reciprocal suggestion on our muscles and on those of our pupils.[8] Hence their ability in reading speech from the lips of their master becomes null when they are face to face with a stranger. This is also the reason why the public generally dislike to talk with the deaf, when they see that a special art is necessary. It is the same mistake, and derived from the same cause, as that of the "*Agrammatismus*" (manner of speaking of the deaf), which we ourselves cultivate in the mind of the deaf by the preconception that they need to understand only the principal words spoken.

It is necessary now for the teachers of the deaf to make a reform, endeavoring to speak to the deaf with due respect to the grammar and in the usual language used, and with the least possible exaggeration in regard to speech-reading. It is not true that the deaf can understand better when the movements of the lips are exaggerated, just as it is not true, to continue my comparison, that they can understand language better by the use of transpositions (which are called *logical*) and by mutilating the syntax. The deaf should learn common language, and they will read it with facility from the lips of others when the synthetic form of the phrase and discourse is observed. This is so true that little deaf children can read words and expressions from the lips long before they can pronounce them, just as hearing children understand a great part of their future language before they have learned it or are capable of repeating it. It is a primary process of anticipation and of psychic integration which we must take into account during all the course of the instruction of the deaf.

The Basis of Speech-Reading.

It is admitted by every one that ability in speech-reading stands in relation to the knowledge of the language and of the actual subject of conversation. This principle, I think, is sufficient to convince us that speech-reading is based on a synthesis and not on an analysis of the single movements of the vocal organs. If this is the case, why do we continue to occupy ourselves with the mechanical and morphological difficulties of language, in regard to the contents, meaning, and limits of the separate phonetic movements, as we do when, with excessive slowness and useless innervation of the oral organs (which produces, by reflection, a facial mimic *sui generis*), we try to make the pupils read from the lips in almost spelling the words?

Conclusions

As a consequence of the preceding observations, I present the following summary of the principal points on which I base my opinions, in answering the questions proposed on this subject:

1. Speech-reading consists in the perception of complex visual images offered to the eye by a succession of oral movements.

2. The more varied the oral forms combined, the easier will the perception be. Hence the difficulty in reading the

[8] If I may quote an example which proves my assertion, I could not do otherwise than to refer to my dear friend, Miss Helen Keller, who having learned articulate speech *only by touch*, speaks in a perfectly natural manner, and does not present the least alteration of the facial muscles, which she cannot see and hence cannot imitate, not even unconsciously, as happens with our pupils and with ourselves.

double consonants and syllable words with the same vowel.

3. There is a characteristic facial image for each isolated phonetic element, but this image is different from that resulting from the *associated* elements in the synthesis of the word.

4. The foundation for every optic-phonetic unity lies in the oral images of the vowels and the lip and teeth consonants. This foundation, however, is made unconsciously during the first teaching of articulation.

5. The teaching of speech-reading is not possible without an exaggeration of the movements of the lips and consequent alterations of the synthetic optic images of the word and sentence, which, if it renders the reading of the elements easier in the beginning, is, however, injurious to the reading of speech, which is the object of the school for the deaf.

"Speech-Reading Not to Be Taught"

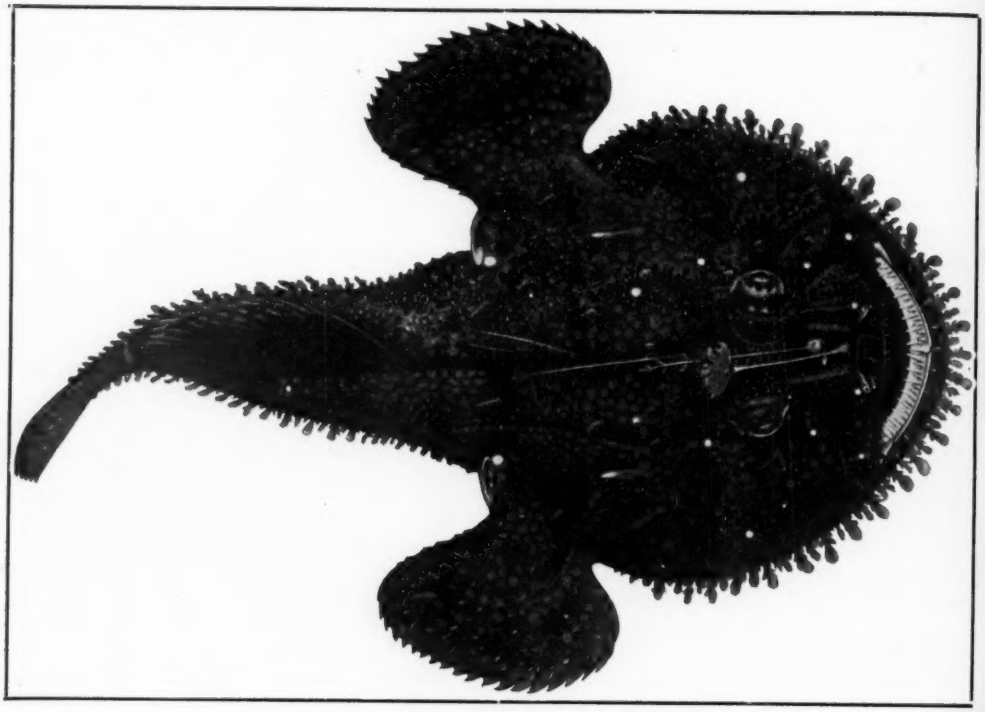
Therefore, speech-reading is not to be taught, but only to be practiced. The way to be followed in this practice is the same as that of the teaching of pronunciation and language. During the preparatory period, *i. e.,* when the analytical foundation of the pronunciation is made, and simultaneously of the perception of the optic images of the vowels and consonants, synthetic reading should not be neglected of important words and short sentences whose meaning is rendered objective by this circumstance and by the actual occasion. Little by little, as the pupil becomes capable of forming judgments and of expressing thoughts, speech-reading must be exercised by *dictation,* observing the tonic accent of the word and sentence, and noticing the pauses in common conversation. The psychic integration of the discourse is made by the pupil, based upon his knowledge of the vocabulary used and his familiarity with the subject, by means of conversation. Although in this synthetic process some words of the discourse escape the pupil, and there remain for him, as heads of the discourse and as familiar points, only the substantives and verbs, nevertheless one must always use grammatically correct speech. One must conscientiously take notice of those parts which escape the eye of the pupil who reads, either because they modify the optical image of perception, or because the deaf may know how to integrate his language in replying, and so avoid the old fault of making mutilated and ungrammatical answers.

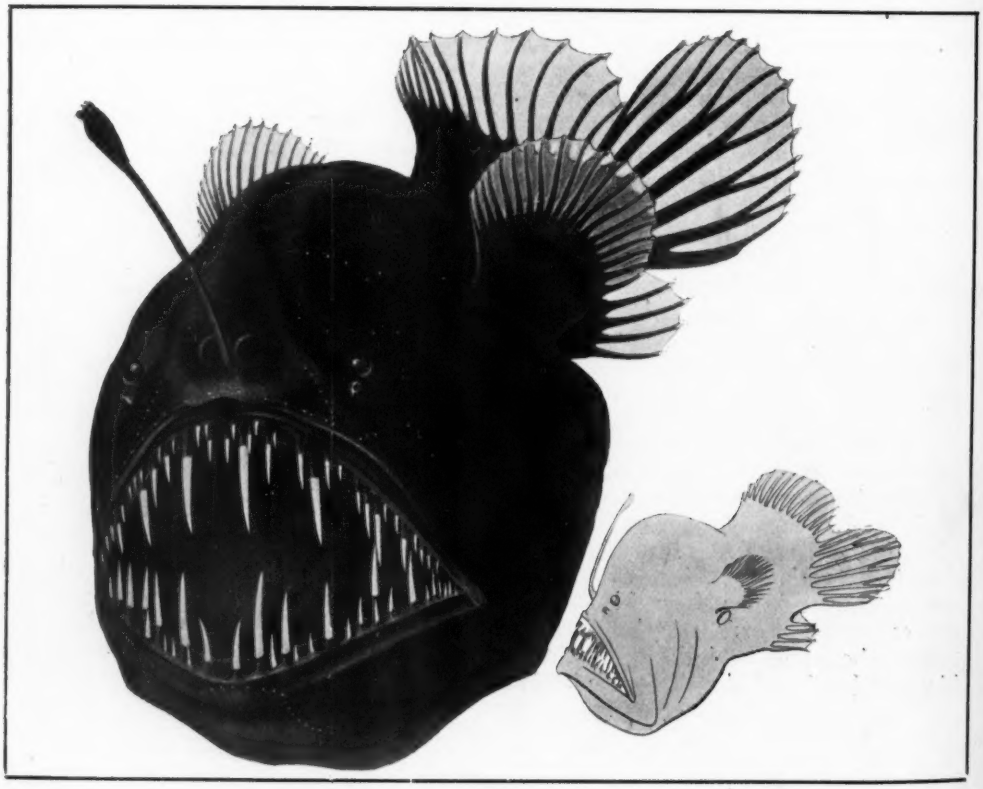
Practical Results

In following this method I have always obtained good results with my pupils. Certainly the deaf of feeble intelligence, while they show, as I have observed, a certain ability in reading isolated words, when they have to follow a succession of words or sentences connected synthetically, use incorrect grammar in expressing them, accompanied always by defective speech-reading. But, notwithstanding, my experience has proved to me that even the deaf of feeble intelligence, when placed in oral surroundings, always improve in speech-reading, especially if they live among the lower classes. This confirms the recent observation of our colleague Baldrian, "that persons of the lower classes of society have greater aptitude than those of more cultured condition in making themselves understood by the deaf, because of the simple and natural manner they have of opening the mouth and of expressing themselves."

The same colleague offers me the conclusion of the present article—a conclusion which indicates a somewhat widely spread defect, and also the opportune remedy:

"Speech which is presented linked together in a natural way is easier to read from the lips than that in which each word is distinctly separated from the other, which spoils the connection of thought expressed and arrests and disturbs the relation indicated by the fluent succession of the optic images of the mouth."





FISHES THAT FISH

LOPHIUS, THE DEVIL-FISH—HIS ROD AND BAIT AND HOW HE USES THEM—HOW ONE COUSIN OF HIS FISHES BY LAMP-LIGHT AND HOW ANOTHER COUSIN WALKS—THE SEA-TOAD, THE FROG-FISH, AND THE VIOLET VEIL

BY F. K. NOYES

MY acquaintance with fishes that fish began in a very unpleasant way one summer, when I was a small boy, intent upon "showing off" my diving abilities. There was a party of us preparing for a swim in Trading Cove, a small inlet on the Maine coast near the village in which we lived.

As the neatest diver of the party, I had the honor of breaking the inlet's glassy surface. Very importantly I peered over the side of our little boat to see what trophy I should bring the fellows up from the bottom. Below us there was a tumbled heap of brownish stones, covered with empty barnacle shells and overgrown with lichen and little sea-plants, whose herbage tossed about idly with the current.

"See them stones?" I asked. "Well, here goes," and I took a header into the green depths.

Then before my eyes there happened a ghastly miracle.

One of the stones left the others and floated toward the top. Two empty barnacle shells turned into a pair of deep-set, sullen eyes; the sea-plants became fins; a fissure in the "rock" yawned open, showing an immense mouth with hundreds upon hundreds of sharp teeth, and a hideous sea-monster came swimming, as it appeared, directly for me.

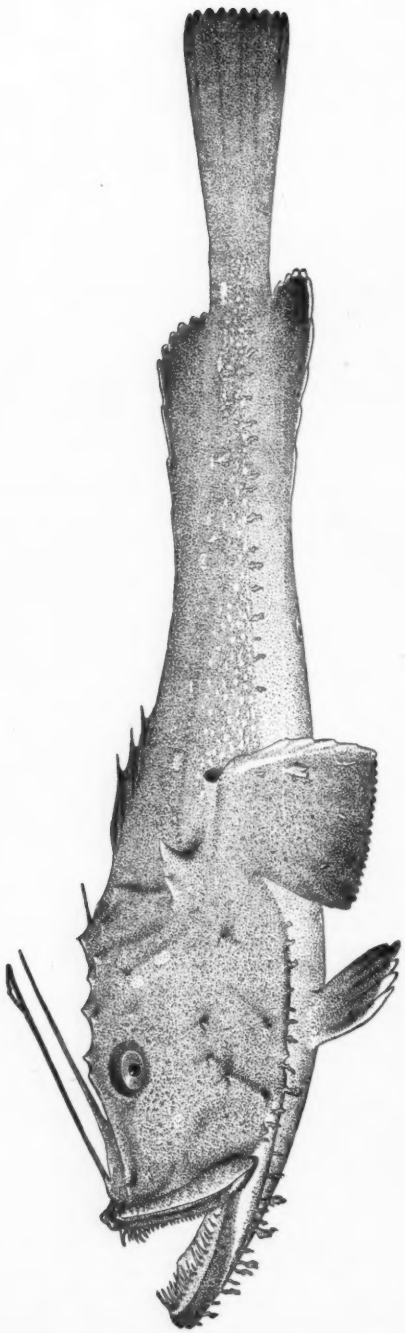
I spread out my arms and legs to check my descent through the water as soon as possible, and scrambled back to the boat in a cold sweat. At any instant I expected to feel that tremendous gaping mouth close about my middle and bite me in two. When I got into the boat again each boy looked at the white faces of the others, and without a word we turned our craft for home.

Thenceforward Trading Cove became the grimmest spot on the coast for all of us. We often went hunting with rifles for that big devil-fish, though while we were in those waters we used the greatest care not to rock the boat. Every one of us could swim, but if we had been spilled overboard in that inlet, with the devil-fish beneath us, we would surely have died of fright long before we could get to land.

There were many stories about the devil-fish. One boy once saw a struggle in the water, and on looking more closely discovered that the fish had swallowed the head and neck of a large loon, which had pulled it to the surface and was trying to escape.

Lophius Is Landed

Another boy saw the fish one noon sunning himself on the surface, and put a shot into him. Instead of finding him six or eight feet in length, as I had estimated in my panic, the devil-fish turned out to be only about four feet long. But no one could overestimate the size of his



A SIDE VIEW OF LOPHIUS

The upper picture on page 166 shows him from the top

mouth. It was big enough to take in a bird or animal that was bigger than the fish himself. The inside of the mouth was covered with teeth, which were stuck not only on the upper and lower jaws, but on the roof of the mouth, on the palate, and apparently went away down his throat as well. He had two immense flap-like fins sticking out on each side, and a sort of fringe that looked like sea-weed all around his body. His hide was blotched and warty. On the top of his head there were two thin, spiny bones that looked like fishing rods, which he could move backward or forward as he wished. One of the fishing rods ended in a lump that looked like a piece of bait.

Scientists call our devil-fish *Lophius piscatorius*. That means crested angler. Plain people call him variously fishing-frog, toad-fish, sea-devil, wide-gap, kettle-maw, goose-fish, bellows-fish, molligut, or all-mouth. The first five names are generally used by Englishmen and the last four by Americans.

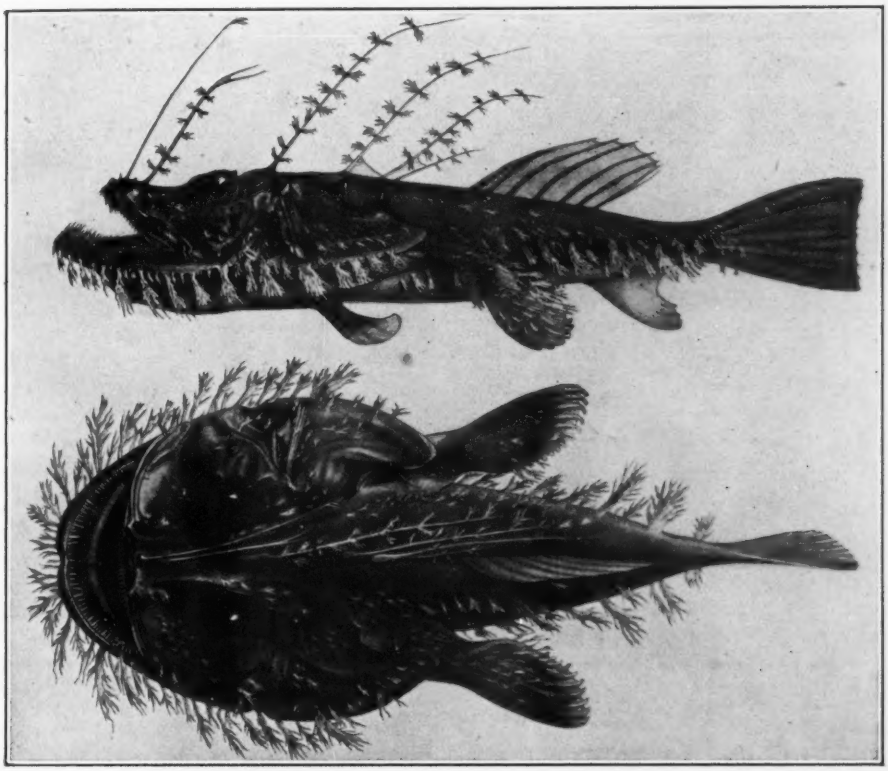
How Lophius Fishes

Owing to his peculiar shape, Lophius cannot swim very fast, so he gets his living by lying on the bottom of the sea, where he looks exactly like a rock, and attracting other fishes to him by waving about the peculiar fishing rods that grow out of the top of his head. When some unsuspecting little cunner or tommy-cod comes nosing about the bait—*flash!* the stone leaps out of place, two immense jaws clash together upon the poor cunner, and the rock sinks back again to the bottom.

Lophius is helped a great deal in his fishing by reason of the fact that his two eyes, which look like empty barnacle shells, are placed upon the top of his head, like a flounder's. Thus he is able to look up from the bottom, and can watch his success in angling without having to move.

A Diet of Buoys, Anchors, and Mud

Lophius eats anything, and owing to the peculiar construction of his jaws he can actually swallow creatures that are



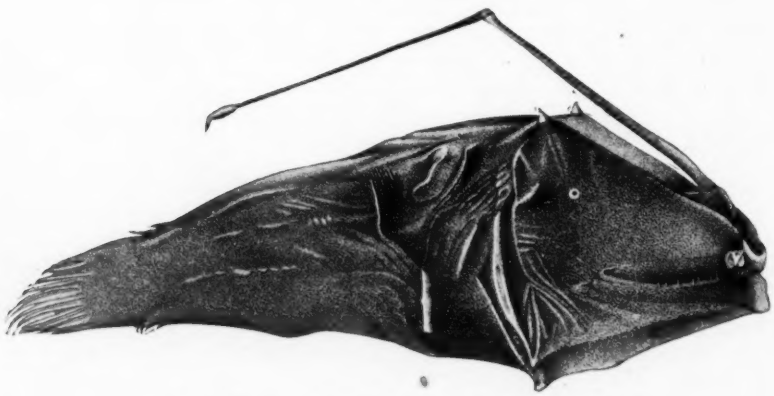
AN ANGLER OF THE PHILIPPINE ISLANDS

bigger than he is. In Massachusetts the fishermen are sometimes annoyed by devil-fish which swallow the wooden buoys attached to the lobster pots. One man caught a devil-fish by using his boat anchor for a hook. Lophius's regular diet consists largely of flatfish, gurnards, sculpins, sea-ravens, dog-fishes, and small rays, as well as crabs, lobsters, squids, and star-fishes; but one was caught which contained a dinner consisting of two mary-soles, one common sole, one piked dog-fish which was a foot and a half long, three moderate sized crabs, fourteen five-fingers, and one whiting. When food is scarce he will eat mud that contains clams, worms, shrimps, barnacles, or craw-fish.

Sometimes Lophius will leave his home in the muddy bottom and venture to the top of the water for a change of diet. Although he is a slow and clumsy swimmer, he is sometimes able to steal upon more active game, including even birds and animals.

The boy who saw our Trading Cove devil-fish capture a loon can verify one instance at least of the success of the excursions of Lophius to the surface. Other persons have seen them swallow live geese, and there is also a reliable record of seven wild ducks being taken out of the body of one of these monsters. Six wild coots were taken out of another. Gulls fall a prey to Lophius's appetite at night, when they are seized as they float upon the water.

Once a devil-fish takes hold of anything, it never lets go. One is reported to have seized the butt end of an Irishman's riding whip, which it held on to until it was drawn ashore. Another

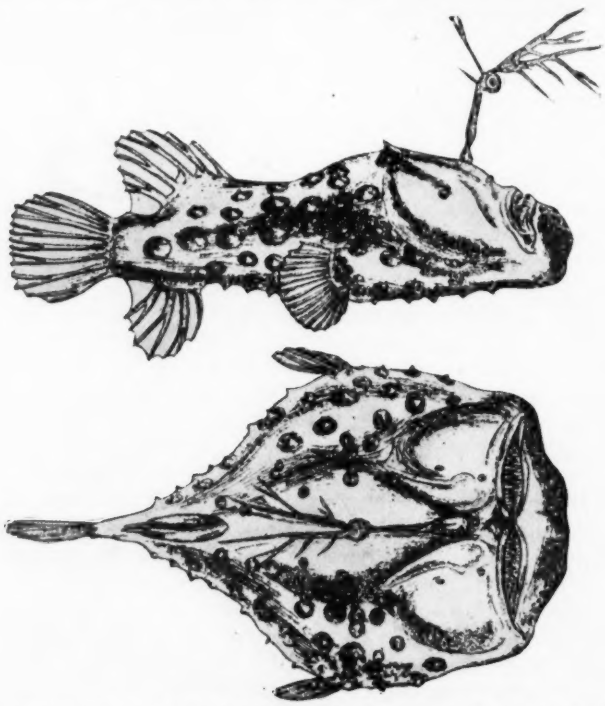


THE POSSESSOR OF A DOUBLE-JOINTED FISH-POLE

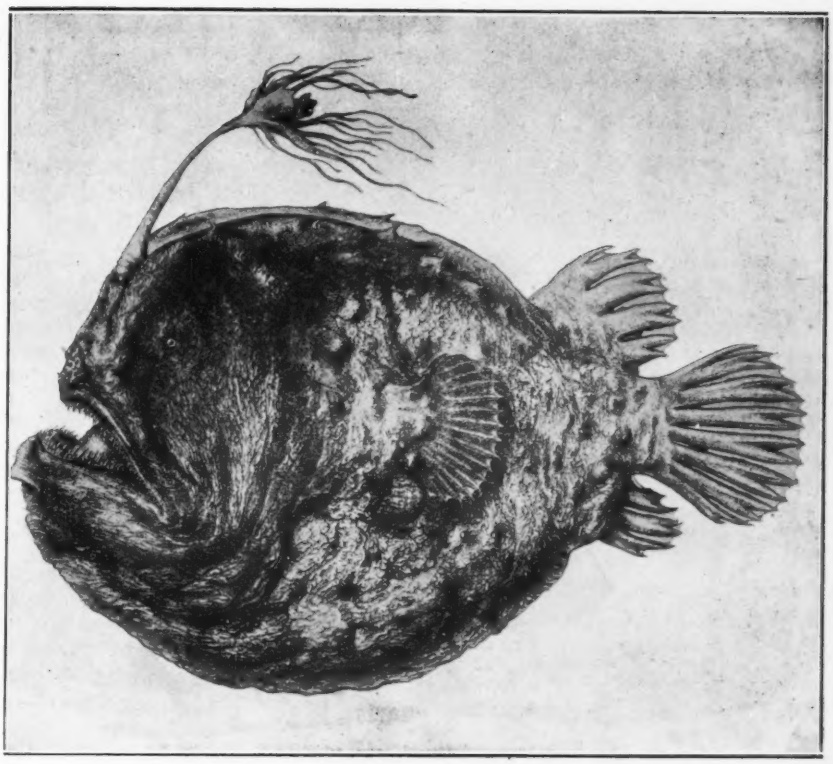
seized hold of a board whch had been thrust into its open jaws, and allowed itself to be captured before it would give up its prize.

Robbing the Thief

Lophius digests his meals very slowly. One of his tribe, when opened by fishermen, was found to contain nearly three-quarters of a hundred herrings, and so little had they suffered change that they were sold by the fisherman in the open market without any suspicion in the buyer of the manner in which they had been obtained. Another yielded up twenty-one flounders and a john dory, all of them of sufficient size and sufficiently uninjured to make a good ap-



THIS PHANTASTIC MONSTER IS A FLATTENED DUPLICATE OF THAT ON THE OPPOSITE PAGE



A SQUEEZED REPLICA OF THE FISH OPPOSITE

pearance in the market where they were sold.

Prejudices and Superstitions

The hideous appearance of Lophius has given rise to a number of prejudices and superstitions. Most persons will not eat this fish, although it is said to make a very palatable food. The Indians of the New England coast, however, had no such compunctions.

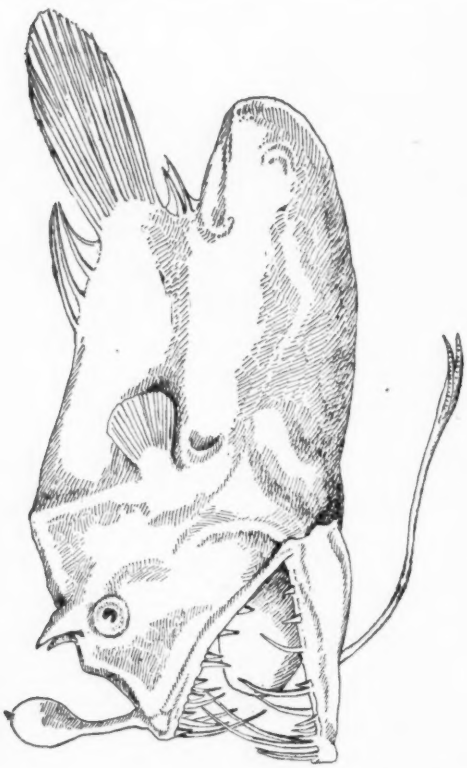
Swedish fishermen believe that the capture of one of these devil-fish means some misfortune to come, and so they cut their tackle as soon as the monster reaches the surface. If one is taken on board the vessel, they believe that one of the crew is *feg*—that is, doomed to die soon. In some parts of the Massachusetts coast the fishermen have a saying, "If you take a goose-fish, look out for an easterly storm."

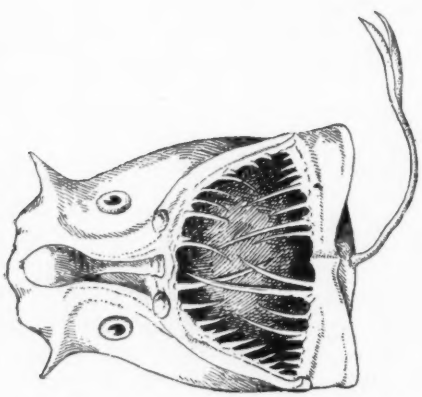
The Lophius that I almost dived into was in rather shallower water than ordinary. Generally he is not found at a depth of less than 100 feet. At this depth, and a little deeper, he ranges the Western Ocean, as sailors call the Atlantic, from the warm latitudes clear up to the frozen waters of the North.

Fishes with Lanterns

He has, however, a large number of relatives living in all parts of the world and in all depths of the sea. Some live far down in the cold and utter blackness at the bottom of Old Ocean. Here the lure of their fishing apparatus would have been of no avail, for the reason that other fishes could not see it, had it not been for a most wonderful provision developed by kindly nature, which replaced the sun's rays by some reflected from the fish itself. The fishing "rod" which

Lophius's cousins carry on the top of their heads is turned into a support for a bulb that sheds a phosphorescent gleam about the bait, which in many instances consists of a multitude of streamers that look like worms. "How efficient such an apparatus must be in the dark depths where these angler fishes dwell may be judged from the fact that special laws have been enacted in some countries against the use of torches and other lights for night fishing because of their deadly attractiveness. Not only the curiosity of the little deep-sea fishes, but their appetite, is appealed to by the worm-like objects close to or in relief against the phosphorescent bulb of the anglers."





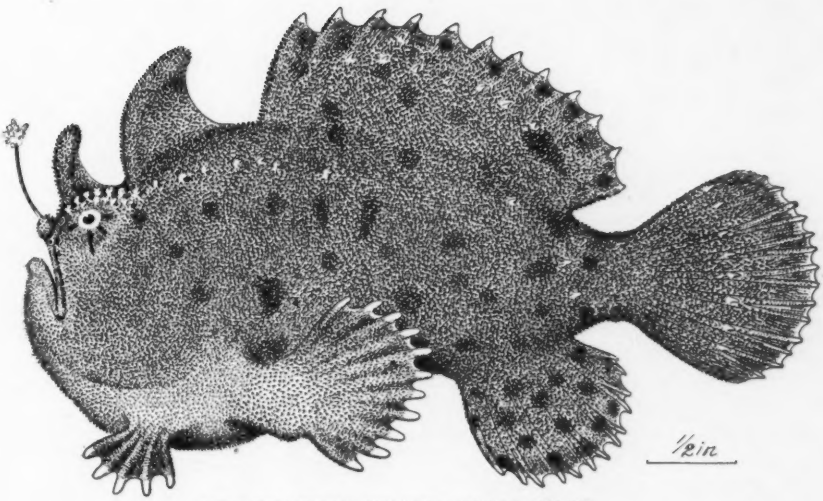
LINOPHRYNE LUCIFER, THE "LIGHT-BEARER"

Fishes That Walk

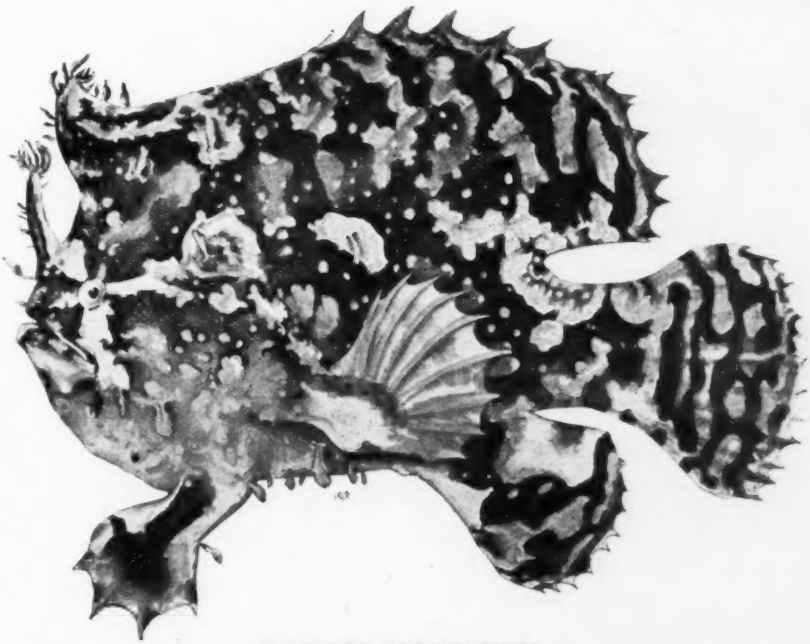
Along the southern coast there is still another variety of these fishes that fish, which are called sea-toads or sea-bats, not only on account of their appearance, but also because they are actually able to walk. Their fins have been equipped with knee joints, and as one pair of fins is much longer than the other, they are able to make their way along by hopping. When frightened they stir up the mud of the bottom, and scuttle off before the water has had a chance to settle. The accompanying picture was made by a scientist, who says that it is "accurately drawn from a specimen secured (by him) on the Brazilian coasts." The bat-fish inhabits shallow waters. They are rather thick in Key West Harbor, Florida.

The Sea-toad's Coral Home

The name sea-toad, applied to these anglers that walk, is rather inaccurate. The true toad branch of this great fishing family is the Antennarius, the members of which live among coral growths. Their skin is splotched with brilliant scarlet and other colors which make them conspicuous in a museum, but which are quite in harmony with the hues of their natural home. When lying in wait for their prey, they turn themselves upside down, with the fore fins on the underside of the body planted in the sand and the hind fins clinging to the coral column for support. Thus situated, they look much like a piece of coral themselves. At the same time they have a good pur-

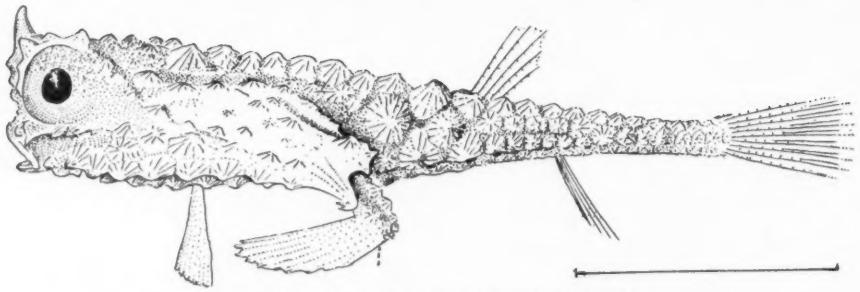


THE SEA-TOAD OF THE CORAL ISLES



THIS FISH *DOESN'T* SWIM

The Pterophryne, which rides at ease on the Sargasso weed



THIS FISH HAS KNEES, AND IT CAN HOP

chase for a quick spring upon any fish that comes too near. The advantage which the sea-toad derives from standing on its head comes from the fact that it has its mouth nearest the fish it wishes to catch. By opening its jaws very wide and sucking in the water about it, the Antennarius is often able to catch small fish in a current which carries them directly into its maw without its having to move.

The Sargasso Fish

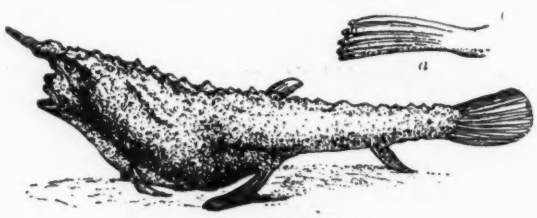
Another near relative of the sea-toad is the *Pterophryne histrio*. This name describes the fish as a winged toad that is an actor. Scientists call it an actor because the gaudy coloring reminds them of a clown or harlequin, and because it is able rapidly to swell out its abdomen so as to change its figure at will. Sailors call these fish frog-fish. In the Atlantic at least they live in the great mass of floating sea-weed which is known as the Sargasso Sea. The Pterophryne has a sort of arm, or wing, by which it can hold tight on to the weed. In the midst of living vegetation this strange creature exhibits color harmonizing with its surroundings, but when the sea-weed has decayed to a brownish hue its color also changes to a corresponding shade.

Very little is known about the life that any of the angler fishes lead before they are grown up. Like other fish, they reproduce by laying eggs. In the case of the Sargasso fish, the eggs are laid at any time from July or August to late October. The eggs are discharged in a jelly-like mass, which becomes swollen upon contact with the water and enlarged into a narrow raft three or four feet long and two to four inches broad, although the mother fish may have been only three or three and a half inches long and had only about one-third the volume of eggs and jelly combined.

The Violet Veil

The egg rafts of Lophius are often noticed on the New England coast, where the fishermen call them the violet veil, for the reason that at a short distance they look like an immense crape of a light violet gray color. When the eggs within the raft are ready to hatch, the jelly that holds them together dissolves, and the little fish are free to begin life. Each raft contains more than 1,000,000 eggs, and each egg is about one-twelfth of an inch in diameter. Out of this hatching not more than two or three fish will live to grow up.

The information in this article is drawn from the exhaustive monographs of Theodore Nicholas Gill, LL. D., associate in zoölogy of the Smithsonian Institution. These monographs have been published by the Smithsonian Institution, by whose courtesy some of the pictures illustrating them are here reproduced.



SO CAN THIS

DEVELOPMENT OF THE HEARING *

BY MRS. J. SCOTT ANDERSON

Principal Swarthmore School and Kindergarten for the Deaf, Swarthmore, Penna.

(NOTE.—THIS PAPER DEALS WITH RIGHT-HANDED PUPILS)

I

THE normal baby learns to understand the language spoken around him only after he has long been familiar with such sounds as the rustling of his crib-sheets, the opening and closing of the door, the splash of water, the mother's lullaby, and the soft foot-falls of those who are his caretakers. These noises of the home, added to those of the outer world, increase his knowledge of his environment and *develop* his hearing, while the constant repetition of spoken language, associated with certain acts and situations, soon enables him to comprehend the meaning of the sentences he has heard and later to use them.

II

While the senses of sight and touch are a great aid to the child learning to talk, that of hearing plays a double rôle. It enables him first to understand and then to reproduce. He hears the speech of others and attempts to talk. He hears his own voice and modulates it accordingly. His language is a reproduction of what he hears, and will be modified as time goes on by what he reads. If he does not hear English he will not speak English, just as you, not hearing Chinese spoken, are unable to converse in that tongue. Thus we see what an important factor hearing is in the development of language.

III

Thus the hearing child becomes accustomed to sound and speech long before he attempts to talk. We leave him alone to work out his own salvation, but what do we do with the deaf pupil? We speak into his ear for fifteen minutes daily, allowing him to remain in silence for the remainder of his waking day. We say, and truly, that he can stand only a short period of ear-work, because it is too nerve-racking. Nevertheless we expect him to learn to hear some words and sentences in just those few minutes. Wonderful to relate, he does, once in a great while, come up to our expectation, but at enormous cost of effort on both his side and that of the teacher. Why do we persist in a method so different from that of nature?

IV

Artificial aids which magnify sound should be constantly used if they enable the child to hear better, for they not only make the pupil conscious of sound while they are being used, but increase the general ability to hear at all times. Let the child wear one, on the left ear, if possible, in school and out, even at the table. Let him become used to the sound of the voices of his schoolmates, the pleasant, or sometimes angry, voice of his teacher, the tapping of little feet upon the floor, the slamming of the door, laughter, music, and street noises. Let him, like the normal child, simply hear, and hear, and hear, no matter *what* he hears. Then, when the time for daily drill arrives, there is no difficulty in securing attention, and there is less nervous strain, because the child is accustomed to sound. This is the logical method of developing the hearing, as it

* Delivered April 29, 1910, before the Sixteenth Annual Meeting of the American Laryngological, Rhinological, and Otological Society, at Washington, D. C.

This paper may, in a sense, be regarded as introductory to the "Hints on Home-Training Department," which is to begin in the next number of THE REVIEW, with Mrs. Anderson as editor.

requires almost no effort on the teacher's part and is a source of real pleasure to the pupil.

V

In dealing with our pupils we have two classes to consider—those whose hearing is only defective and those who are practically deaf. In either case use an instrument, in school and out, at all times when it does not interfere with the child's play. Never allow a drill to exceed fifteen minutes with older pupils, and spend even less time with the very little ones, else they will become nervous and tired.

First Class.—With the partially deaf the aim is to increase distance at which sounds already heard may be distinguished and to add new words to his list. Test the hearing by conversing with the pupil, using whatever tone is best heard. Then seat the pupil with his back toward the teacher and determine how far away familiar questions, quotations, sentences, and words may be heard, making that limit your starting point. Begin the drill by asking for every-day information, or by discussing topics of general or special interest. Next use names of the days of the week, letters of the alphabet, and numerals, always guarding against telling the pupil when he does not hear correctly. Keep a careful record of sounds heard, as well as of those not heard.

There is, of course, a limit beyond which sounds cannot be heard, but the first halting place is seldom the last.

The practical results of this drill are these:

I. The pupil hears at increased distance from the speaker;

II. He hears a greater number of words, sentences, etc., and

III. He hears new sounds on which he has never been drilled. However, a peculiar thing is here noticeable. Conversation carried on in tones different from those used in the drill can seldom be heard, but, if a second drill be resorted to, all tones between the two drills may be heard.

Second Class.—As the so-called deaf child never learns to hear many words or sentences, we should not make the understanding of these our aim. It is too high. Neither should we cease our efforts to teach him to hear, as most teachers are likely to do. What should our aim be? To train the child so that through hearing and touch he is able to reproduce the tones of his teacher's voice, and to accent words and sentences correctly. We can do no more! This should be accomplished by first calling his attention to the existence of sound itself and to number of beats. Then he should be taught to distinguish between the sound of different bells, musical instruments, and, finally, the various tones of the human voice.

VI

In closing I would say that I have left an exceedingly strong reason for auricular training until the last. While little, if anything, is known concerning the physiology of the brains of the deaf, contrasted with those of the hearing, psychologists assure us that when one center is inactive the whole structure suffers. What then must be the result of the inactivity of two centers—that of speech and that of hearing? Reasoning from the accepted theory, we find that such a condition should tend to abnormal (or should I say subnormal?) brain development. Does it? Have we proofs either way?

Are orally taught deaf children really more nearly normal than those taught otherwise? Is this the reason they appear so much brighter? I believe so, and I believe that we find here a most convincing argument for the oral method of instruction, even though the speech of many may be very defective.

Considering that there is a probability of better general brain development when all the centers are called into activity, the duty of the instructor of the deaf is surely very plain—to develop both speech and hearing in every child in the classroom.

"The problems of deafness are deeper and more complex, if not more important, than those of blindness. Deafness is a much worse misfortune; for it means the loss of the most vital stimulus—the sound of the voice, that brings language, sets thought astir, and keeps us in the intellectual company of man."

—Helen Keller to Dr. James Kerr Love.

The American Association to Promote the Teaching of Speech to the Deaf

INCORPORATED SEPTEMBER 16, 1890

HOME OF THE ASSOCIATION AND BUREAU
Volta Building, Volta Place and Thirty-fifth Street, Washington, D. C.

The Volta Bureau for the Increase and Diffusion of Knowledge Relating to the Deaf

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Inventor of the Telephone.

"THIS IS A WATCH"

In learning a new word, the deaf child's attention is first directed to the object described, after which she repeats the word aloud, following the movements of the teacher's lips, till practice makes perfect

This Association and Bureau work in harmony with all methods of educating the deaf in a knowledge of the English language. They insist, however, that the deaf shall in all cases be trained in the use of speech (see page 4).

Speech training is divided into two branches: communication of speech and reception of speech. The mastery of the first branch requires that the deaf correctly utter speech sounds; the second branch demands that they be able to read the lips of other speakers as the ordinary person reads the type on a printed page.

In the vast majority of instances these results are entirely possible of accomplishment.

In their scientific and educational work the two bodies have the support of all the deaf who have been taught to speak, as well as of every deaf-mute who longs for the power of speech, and of every educator of the deaf, every friend of the deaf; and of scientists, humanitarians, and all students of deaf-mutism.

* These are from photographs taken at Miss Reinhardt's Home School for Deaf Children at Kensington, Md. Miss Reinhardt teaches her deaf pupils by speech alone.

THE VOLTA REVIEW

The Association and Bureau conjointly publish an illustrated monthly magazine called THE VOLTA REVIEW, which is sent without charge to all members. The editorial policy of this magazine partakes both of the scientific aims of the Bureau and of the educational aims of the Association, with the result that it is read alike by educators of the deaf, the deaf themselves, and their families and friends; by psychologists, aurists, sociologists, and publicists. THE REVIEW is also a magazine of good reading on subjects about which people are talking and thinking. Possibly its best illustrations are printed in connection with this matter.

With the June number Dr. Alexander Graham Bell, inventor of the telephone, the photophone, the telephonic probe, and the tetrahedral kite, begins a series of papers discussing such subjects as—

The Aerodrome of the Future.
Application of Telpherage to South Polar Exploration.
Seeing by Electricity.
Artificial Respiration.
A World of Sound beneath the Waves.
Cosmic Thoughts: Civilization on Mars; Is There Life on Venus? The End of the World.
The Artificial Production of Drinking Water.
Improving the Human Strain (Dr. Bell is a leader in the eugenical movement).
Driving Engines by Sun-Power.
My First Invention.

All of these papers are published for the first time in THE REVIEW.

Departments in "The Review"

Universal Alphabetics (see page 8), Suggestions to Teachers (class-room helps "with the crayon dust on them"), Contemporary (Foreign) Thought (relating to deafness and the deaf), News and Comment (current events in the silent world), Readers' Forum, Hints on Home Training (of little deaf children). It is also the intention to begin, in an early number, a department devoted to aiding the hard of hearing.

A partial list of some of the recent articles designed "to promote the teaching of speech to the deaf" or published "for the increase and diffusion of knowledge relating to the deaf" is herewith appended, roughly classified with regard to those readers—aside from educators—who found them of peculiar interest:

Parents: "How a Mother Educated Her Own Deaf Child," by Mrs. E. A. Wise; "How My Children Were Educated," by Mrs. Lucy M. Sanders; "Jane and the Symbols," by Mary S. Breckenridge; "A Plea for the Education of Parents of Deaf Children," by Mrs. Lucile M. Moore; "Development of the Hearing," by Mrs. J. Scott Anderson.

Physicians, especially aurists: "The Power of Hearing in the Deaf and the Task of the Specialist Physician," by Prof. G. Ferreri, Instituto dei Sordomuti, Milan, Italy; "The Deaf Child from the Viewpoint of the Physician and of the Teacher," by James Kerr Love, M. D., Glasgow, Scotland; "Are the Deaf Less Sensitive to Pain than Others," a discussion; "The Function of Hearing and the Language of Deafness," by George E. Shambaugh; "Laboratory Methods of Determining the Status of the Deaf," by D. P. McMillan.

Psychologists, sociologists: "Overcoming Limitations of Human Efficiency," by Seth W. Gregory; "Illustrated Lessons in Morals," by the Rev. Milton Fairchild, founder of the Moral Education Board; "Conversing with the Blind-Deaf," by Prof. A. Czily; "Social Training That Makes for Efficiency," by Marion E. Washburn; "Cultural Value of Industrial Education," by E. W. Walker.

Of common interest: "Reminiscences of a Retired Educator," by Richard Elliott, M. A., L. H. D.; "Physical Training and Mental Vigor," by Grace G. Green; "Lip Reading," by Giulio Ferreri, Milano, Italy.

CONTRAST THE VIVACITY OF THESE SPEAKING DEAF CHILDREN WITH THE FACIAL EXPRESSION OF THE TYPICAL DEAF-MUTE

Speech develops important brain centers

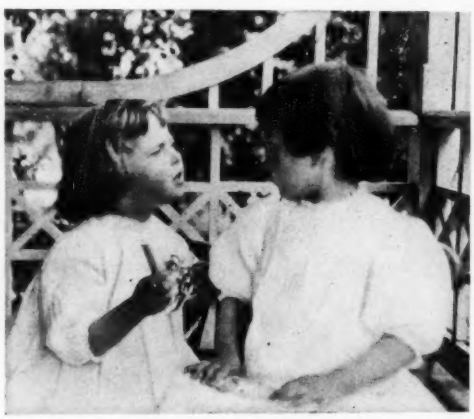
THE EDUCATION OF THE DEAF

The typical deaf-mute is a normal person deprived of hearing at an early age. All other defects are incident to the early supervention of this infirmity, and all can be eradicated by proper education.

Of these incidental defects, the two most important are loss of speech and loss of language.

Man is naturally a dumb animal; speech and language, like the power of walking, must be learned consciously in every instance.* The hearing child picks up both speech and language naturally, by ear; he imitates the talk of his elders till by dint of practice he comes to "be like" them.

The child who is born deaf, or who becomes deaf previous to his fifth year (prior, that is, to the formation of the speech habit) can never acquire speech and language in this way. Special scientific methods, based upon the use of sight as a substitute for the sense of hearing, are used to educate the deaf child to speech and language.



"WON'T YOU HAVE SOME CANDY?"

The spoken word is as natural a means of communication for these two totally deaf babies as it is for hearing children.

Language

Language can be taught to the deaf without speech, and has so been taught systematically ever since 1760. (In this country since 1817.)

The acquisition of language enlarges the mental horizon of the deaf, vastly enhances their reasoning powers, and places them on an intellectual equality with their fellow-men. Language swings open the gates to knowledge.

How the Dumb Converse

But the deaf must know speech as well as language. If the deaf man be likewise dumb he can converse only—

(1) By means of the sign language; or,
(2) By spelling on the fingers; or,
(3) By writing out what he wishes to say.

All of these methods are unsatisfactory. Most hearing persons do not know what to make of the sign language or the manual alphabet. Such methods of intellectual expression are unusual to them, and so are regarded in a manner as unnatural. In any event, they are unintelligible to most hearing persons.

So it happens that the dumb have only writing as a means of communication with the hearing world.

Conversation carried on by means of the pad and pencil is intolerably slow and cumbersome; moreover, it is robbed of that precious, vitalizing, *human* element of speech, which is the largest factor that goes to make up what we call personality.

Speech

The purpose of education for the deaf, as for the hearing, is the attainment of efficiency, welfare, and happiness, and no deaf child can realize these ends in the highest degree so long as he remains dumb. When the time comes for him to earn his own living he must of necessity move in the world of hearing and speaking people, and then speech becomes a vital necessity. Speech thus has an economic value in that it tends to add to the deaf man's earning powers.

"A Miracle of Education"

Every typical deaf-mute can be taught to speak whether he has been deaf since birth or not. The formation of recognizable speech sounds by those who have never heard sound of any kind may be regarded in a manner as a miracle of education.

* See CASPAR HAUSER (1812-1833) von Josef Hickel. . . . Hrsg. . . . von J. Meyer. Ansbach, Brügel u. Sohn, 1881.

BAKER IS TELLING A STORY

Note the intentness with which the eyes of all the other deaf children are fixed upon Baker's lips; they "see him speak"

A painter born blind would be no more wonderful an example of the results to be obtained by special training than is that presented by the congenitally deaf child who can talk.

Facility in Speech

The facility in speech acquired by the deaf naturally depends upon the amount of training which they have had and the age at which this training began.

Ordinarily the deaf child enters our public institutions at the age of 7 or 8 and graduates at 20. Under proper and adequate methods of instruction his speech at graduation is little or no more difficult to understand than English as spoken by a foreigner. If the child be sent to a kindergarten at the age when the hearing child begins to pick up speech, namely, at two or three, he can be trained to speak with added smoothness, natural inflection, and pleasant tone quality.

The speech-taught deaf have a great advantage over the deaf-mutes, and the latter have no countervailing advantages.

Advantages of Speech

(1) Speech enables the deaf to rid themselves of the odious connotation of the word "dumb."

(2) Speech enlarges their means of communication with the hearing world, facilitates their mental processes, develops important brain centers, tends to increase their earning capacity, and contributes materially to the success of their efforts toward social advancement.

(3) Speech enables the deaf to mingle more freely with the hearing world, thus tending to produce exogamy and to eradicate the danger of increasing the number of deaf offspring—a danger which follows intermarriage between families having a strain of deafness.

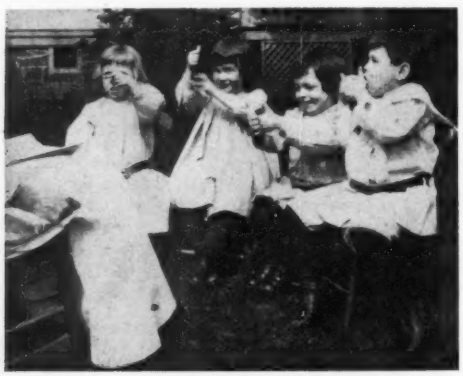
(4) Speech adds immeasurably to the individual happiness and welfare of the deaf themselves.

THE TWO ORGANIZATIONS

THE AMERICAN ASSOCIATION TO PROMOTE THE TEACHING OF SPEECH TO THE DEAF was incorporated in 1890 under the laws of the State of New York "for the purpose of promoting instruction in speech to all deaf children throughout America."

In December, 1908, the Association took over, and is now continuing the work of, THE VOLTA BUREAU FOR THE INCREASE AND DIFFUSION OF KNOWLEDGE RELATING TO THE DEAF (see pages 7 and 8).

The Association labors to keep alive in the deaf the most precious acquisition of the human race—the faculty of speech—and to promote the happiness and welfare of the deaf in every way.



LIP-READING AND WORD-DRILL

"Show me your thumbs" (your elbows, your eyes, etc.). The children receive no cue other than the spoken word from the teacher.

The Bureau is designed correctly to inform the public regarding this important class of our population, which numbered some 89,000 according to the last census, and to conduct research work of a scientific character into the general subject of deafness, its laws, its phenomena, and its problems.

As is elsewhere explained, the work of the Association and the Bureau is not only scientific and educational; it also has an important bearing on economics, on sociology, and on eugenics.

The A. A. P. T. S. D.

The work of the Association in making the deaf speak is indicated in the following figures, compiled from an independent source, which show the percentage of pupils taught speech in our institutions for the deaf:

In 1884 (first figures recorded)	27.2%
In 1890 (Association formed)	41.3%
In 1900	63. %
In 1910	71. %

It is to be added that the Association's own figures, taken since 1899, show slightly larger percentages of speech teaching than are here indicated.

The Volta Bureau

The investigations of this Bureau are of importance by reason of the fact that aurists' examinations show the majority of persons to have impaired hearing.

One of the most important results of the Bureau's research work has been the determination of the law governing the inheritance of deafness. Briefly put, this law states that the mathematical chances of deaf offspring resulting from any given marriage are better determined by examining the respective families of the contracting parties than by studying the parties themselves. Thus, as an extreme illustration, if both parties to a marriage come from families either or both of which possess two deaf members, the chances of deaf offspring are enormously increased, *even if both parties be hearing persons, and irrespective of the fact that the family deafness may be adventitious.*

The mathematical chances of transmitting deafness have been worked out by this Bureau's investigators under all possible contingencies.

For further information upon this subject see "A Memoir upon the Formation of a Deaf Variety of the Human Race," written by Alexander Graham Bell, from statistics compiled under his supervision by this Bureau, and published at Government expense by the National Academy of Sciences.

See also "Marriages of the Deaf in America," by Edward Allen Fay, vice-president and professor of languages at Gallaudet College (published by the Volta Bureau).

Dr. Bell's treatise, "Marriage: An Address to the Deaf," deals with this subject in a popular way.

METHODS OF WORK

The Association and the Bureau accomplish their work—

1. By publications, including monographs and THE VOLTA REVIEW, an illustrated monthly magazine of general and technical interest, all the receipts from which are devoted to furthering the work of the Association.

2. By the maintenance of the largest technical library of its character in this country, if not in the world.

3. By conventions, at which all the leading specialists in problems relating to the deaf meet for an interchange of views and for the delivery of addresses, which are later published.

4. By the preparation of exhibits for the purpose of enlightening the public as to the character, the importance, and the progress of the work done by the Association.

5. By contributing toward the maintenance of a normal class of instruction at the Clarke School, Northampton, Mass., a sum which last year was in excess of the total revenue derived from membership dues in the Association.

6. By providing a clearing-house of information through its executive offices in the Volta Building, at Washington, D. C.

7. By maintaining a Teachers' Information Agency, which is conducted without charge.

8. By the preparation and circulation of exhaustive statistics and information relating to the deaf.

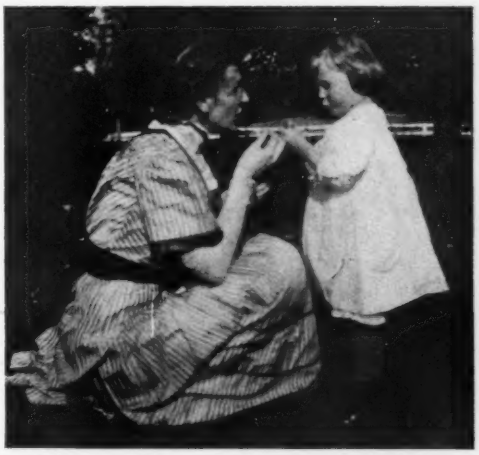
9. By such additional research work as the Association's resources will permit.

The Volta Library

Since its foundation, 25 years ago, the Volta Bureau has been constantly engaged in collecting all useful information, not only with reference to the deaf as a class, but to the deaf individually. In this Bureau can be found the histories of more than 100,000 deaf, as well as many charts and diagrams illustrating family histories, etc.; and books, periodicals, and other literature dealing with the subject of deafness in all its phases.

The census reports relating to the deaf have been deposited with this Bureau. It is also the repository for the private library of the late Prof. Joseph Henry, first Secretary to the Smithsonian Institution, as well as for what is probably the most extensive private collection of New England town histories in this country.

The many publications of the Volta Bureau are exchanged with foreign countries through the United States Bureau of Education and the International Bureau of Exchanges connected with the Smithsonian Institution.



LEARNING TO COUNT—"ONE, *TWO*"

Membership Dues and Privileges

All members of the Association are entitled to its magazine, THE VOLTA REVIEW, without charge for the period of membership; to a reduced rate on its publications; to the free use of its library, and to all information collateral to the purposes of the Association which may be in the possession of its officers.

There are no obligations incident to membership further than payment of dues and the moral support which is implied in membership itself.

The annual dues for joint membership in the Association and Bureau are $2, with no entrance fees. Life membership is $50.

HISTORY OF THE VOLTA BUREAU

This institution was named after the Prix Volta, which furnished the original nucleus from which its present endowments have been derived. The Prix Volta, which consists of a special appropriation of 50,000 francs ($10,000) voted by the French Congress, was founded by Napoleon I in honor of the discoverer of the voltaic pile, and is awarded at long intervals for electrical inventions or discoveries of the first magnitude. In 1880 Alexander Graham Bell received the prize for his invention of the magneto-electric speaking telephone.

This prize furnished the working capital for the Volta Laboratory Associates, which consisted of three men, including Dr. Bell, formed for joint work upon some subject that should promise financial returns, the object being to create a permanent fund that might be used to promote scientific researches of an unremunerative nature.

The associates developed the graphophone from a scientific curiosity into an apparatus with commercial possibilities, and their patents today are the basic patents controlling the manufacture of all phonographs and graphophones in this country that use any waxy materials in their records.

As co-inventor and owner of the capital which developed the graphophone, Dr. Bell derived about $175,000 from the sale of the patents. Practically all of this money was devoted to the endowment of the Volta Bureau, which was further increased when Dr. Bell turned over to it about $75,000 which he inherited from his father's estate.

In 1893 the fireproof building at 35th Street N. W., and what is now Volta Place, Washington, D. C., was built, Prof. Alexander Melville Bell, Dr. Bell's father, contributing $14,000 toward its erection.

Its first superintendent was the Hon. John Hitz, former consul-general from Switzerland, and at his death he was succeeded by Frank W. Booth.

THE UNIVERSAL ALPHABETICS

At least five pages of THE VOLTA REVIEW are devoted every month to the spread of the Melville Bell System of Universal Alphabetics, a system of speech symbols the mastery of which enables the student correctly to pronounce at the first attempt any sound in human speech.

This system of alphabetics is founded upon an entirely new principle. Instead of arbitrarily representing the sound to be expressed, the symbols represent pictorially the position assumed by the organs of speech in making the desired sound, and from this circumstance the popular name of the system, "visible speech," is derived.

According to M. Gardiner, editor of this department in THE REVIEW, this system is "the most practicable means ever devised to give better speech to the deaf and persons handicapped by defective speech, uneducated persons, and foreigners struggling with our unphonetic language; to enable persons to master foreign tongues quickly and accurately; to afford a scientific basis for the study of philology; to be an indispensable adjunct of such enterprises as the Esperanto language, which contains one defect—the impossibility of standardizing the pronunciation of their letters—a defect the Bell Universal Alphabet seems especially designed to remedy; to afford a better system of stenography and of universal telegraphy—in short, to provide a method of study which shall meet the wants of all who speak; that is, of every one."

This system of alphabetics is used as a permanent standard of pronunciation by the lexicographers of the "Oxford" Dictionary, edited by Sir James A. H. Murray. The Volta Bureau has issued a little pamphlet called "The Story of 'Visible Speech.'" which gives a popular account of the history of this remarkable system and of its inventor, the late Prof. Alexander Melville Bell. The pamphlet will be forwarded on receipt of two cents postage.

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GEORGE DRAPER OSGOOD

AN EXAMPLE OF WHAT SPEECH-TEACHING CAN DO FOR THE DEAF—A CHILD WHO ENTERED A SCHOOL FOR HEARING CHILDREN AT NINE AND ENTERED HARVARD AT TWENTY

BY MABEL ELLERY ADAMS, A. B., Horace Mann School, Boston, Mass.

GEORGE DRAPER OSGOOD was born April 25, 1888, into a New England family whose every tradition emphasized the importance of education. He was either born deaf or became deaf soon after birth; but the fact of his deafness was not discovered until he was twenty months old.

On the day Dr. Clarence Blake pronounced judgment the mother went to Miss Sarah Fuller for advice as to her son's education, and Miss Fuller, all loving sympathy and educational zeal, mapped out a plan in accordance with a long-cherished theory. The circumstances were all favorable—family devotion and intelligence, ample means, a child who had never been regarded as otherwise than normal—all these combined to make the plan feasible, and George's education to this day has been mapped out along the lines thus laid down, modified, of course, to meet circumstances as they arose. The plan in outline was to treat him like a hearing child, but to supply the special teaching which would make such treatment effective.

George was the youngest of four children, there being a brother six and twin sisters five years older than himself. These older children made the working out of the plan possible. They had always talked to him naturally in his babyhood; they were told to go on talking to him after his deafness was discovered, and they did. As it happened, there had never been a deaf person within the circle of the family's acquaintance, so nobody had any theory about signs, for or against; but Miss Fuller said signs would hinder his progress and would be unnecessary, and consequently no one ever made a sign to him, except the common one of beckoning.

George's first teacher, a refined young lady, with some special training, came to him when he was two, and acted as a nursery governess. Her task was to attract his attention to her lips and to make him realize that the world talked; she encouraged him to use his voice in babbling sounds, but did not force him in any way, as may be gathered from the fact that at the end of the year he spoke and used but two words—*up* and *milk*. He also recognized a few words and phrases on the lips.

From three to four he had no teacher, but the family talked to him constantly.

His second teacher, Mrs. Helen Scott (born McGill), came to him when he was four, and in ten months gave him a magnificent start in language along orthodox oral lines, using speech and writing herself, but requiring only speech from her four-year-old pupil.

In October of the year he was five, George began to attend the Horace Mann School mornings, from nine until half-past eleven, and the writer gave him private lessons in language five afternoons in the week. These lessons were supposed to be an hour long, but, as pupil and teacher became better acquainted, they were more often two. [For particulars, see the Annals, Vol. XLII, Nos. 3 and 4.]

This general plan was followed for a little over three years, until the boy was nearly nine; that is, he attended the Horace Mann School mornings—increasing the length of his session slightly each year—and received private instruction from different teachers in the school afternoons. Mrs. Monro taught him speech, Miss Tripp arithmetic, and the writer language. This afternoon instruction decreased in amount as his morning session lengthened. All this time he

GEORGE DRAPER OSGOOD

talked and was talked to. Nobody ever made a sign to him, and he never made a sign to any one, so far as his family can remember. By the time he was seven he was using formally correct spoken language rather better than that which his hearing brother and sisters had used at the same age. This superiority the family attributed to the fact that the older children's language was more or less influenced by what they heard outside their home, while George, in his narrower circle of friends, had no opportunity to pick up incorrect forms. Reading, without direction or help, became a pleasure to him when he was seven years and four months old—he was discovered reading *The Bushy Bride* in Andrew Lang's *Yellow Fairy Book* one day in August, 1895—and after that his vocabulary and his mental powers developed much as hearing children's do. He was in possession of the tools! This same year he had a four-months' trip to Europe with his family and teacher, doing the conventional sight-seeing and broadening his mental horizon in numberless ways.

In School with the Hearing at 9

Three months before he was nine he entered Miss Hazard's private school (for hearing children) in Boston. This

change was made thus early at Miss Fuller's suggestion, because he did not fit in the Horace Mann: his facility in language, his knowledge of history and geography, and his general information, acquired without effort through his constant reading, were all sufficiently advanced for an upper grade, but neither his physical strength nor his patience were adapted to the long written exercises and the slow, careful "developing" of new subjects appropriate for ordinary deaf children in their early teens. The teacher of elementary science epitomized the situation one day when she said: "He understands all that I am trying to teach in the first five minutes, and then turns his mind to other things for the rest of the lesson period—to the detriment of his own mental growth, the general class attention, and my peace of mind."

In the new school George was placed with children about his own age. He was required to recite like the other pupils, and to read the lips of the teachers. Very little attempt was made to have him read the lips of his classmates during recitation—the seating arrangement did not permit it—and there can be no doubt he missed much of the general instruction. His speech, too, went uncorrected during school hours. This, however, was partially remedied by private instruction by Mrs. Monro.

On the whole he got on very well, but let no one think this transition from the school for the deaf to the school for the hearing was done without help. For the first year or so the mother watched him constantly. She went to the school after hours and demonstrated to the teachers that he could be made to understand by speech alone; she invited the teachers to the house for week-ends, and they saw how he talked in the family; and she sat down with him night after night and taught him his home lessons. After the first year the need for this care lessened, and as time went on it ceased altogether, the boy himself taking the responsibility of asking for help when there was need for it.

George attended Miss Hazard's school until 1899, and then entered Chauncey Hall, at that time a mixed private secondary school, fitting for college or giving a general upper grammar and high school education. This particular school was chosen because several graduates of the Horace Mann had attended it, and the teachers were accustomed to deaf pupils. He remained in the school until 1904, doing regular class work. Such special help as he may have received did not differ in kind from that which other pupils received; the policy of the school contemplated individual help wherever it was needed. George himself was, and is, very enthusiastic about the teaching in this school. He declares that the teachers never left a subject until they had convinced themselves that he understood it, and that no trouble was ever too great for them while they were making a point clear.

Throughout his attendance at Chauncey Hall George had private instruction in speech, part of the time from Mrs. Monro, and, for a year, when he was sixteen and his voice was changing, from Mr. Richard Wood Cone, a well-known Boston teacher of speech and oratory. The year he was studying with Mr. Cone he attended school only part of the day, and this fact helped delay his entrance to college. A further delay was occasioned by a family trip to Europe, which kept him out of school for the year 1904-1905.

Preparing for College

When the family returned to Boston in 1905 George entered Noble and Greenough's, a classical fitting-school for boys. Chauncey Hall had recently become an exclusively scientific school, preparing its pupils for the Institute of Technology, and, as George was to go to Harvard, it was thought better for him to go to a school which specialized in the proper subjects, where he would meet boys who would be his future college companions. He was the first deaf pupil the school had ever had, and the teachers differed greatly in their ability to teach him successfully. Some of them, like the teach-

ers at Chauncey Hall, required oral recitations, while others demanded a written translation of every day's lesson. His studies were the usual ones for the Harvard entrance requirements; he prepared in Latin, French, German, plane and solid geometry, physics and chemistry, elementary and advanced algebra, trigonometry and the classics, Greek and Roman and advanced United States history, and, of course, English, and experienced no particular difficulty with any of them. One of the teachers was engaged to tutor him whenever he felt the need of help, but he availed himself of this opportunity surprisingly little.

In June, 1907, George passed fourteen points—all he tried—of his preliminary examinations, getting fairly good marks and one honor, a B in history. The next year, his last in school, he divided his time, going to Chauncey Hall for physics, chemistry, and advanced algebra, and continuing at Noble and Greenough's for his other subjects. He thought he could do better under this arrangement, for various reasons, and both schools were willing. Mr. Franklin T. Kurt, one of the principals of Chauncey Hall, and the dean of the Y. M. C. A. evening scientific school, who taught him chemistry and physics, found the work a pleasure and experienced absolutely no difficulty in conversation with him. In June, 1908, he passed his finals, passing in everything, with a point to spare, and getting honor-marks in four subjects—A in physics and advanced algebra, and B in chemistry and advanced history.

Vicarious Note-Taking

In October of 1908 he entered Harvard. Up to that time no attention had been called to his deafness. He took his examinations like any one else, and no one but the officer in charge of the laboratory examinations had any occasion to know he was deaf. When he was actually a student in the college, however, it became necessary for him to make some arrangement about notes. A little reflection will convince any one who has ever had practical experience in note-taking in a college lecture-room that, even if the instructor faced the class every minute and the deaf student understood every word, it would yet be impossible for him to take notes unless, in addition to perfect lip-reading, he also possessed the difficult art of writing without looking down at his paper. As a matter of fact the instructor must often speak with his back to the class, especially in mathematics and science courses; and, even when he faces the class, unprepared subject-matter, inverted constructions, abortive sentence beginnings, mannerisms, and tricks of speech frequently render parts of a lecture "untakable" for minutes at a time, even to the student with the keenest hearing. So a deaf student has no choice but to avail himself of notes taken by some one else. In the present instance George made arrangements with former classmates to allow him the use of their notes in two of his courses, and in the other three, in which there happened to be none of his intimate friends enrolled in his section, he secured a like privilege, for pay, from students recommended to him by the officer who controls all kinds of student employment.

Of course it is obvious that such a method of obtaining college instruction is not ideal. *Verbatim* stenographic notes might, in large measure, take the place of the actual hearing of a lecture, but these are out of the question. Failing these, the best long-hand notes for the purpose would be those which most nearly approached *verbatim* accuracy—notes which told the deaf student practically all the instructor had said, and allowed him to choose what he would remember. But, in practice, each note-taker writes down what seems to him important, and the deaf student must, perforce, be limited to his own note-taker's point of view, so far as his knowledge of an individual lecture is concerned, and is liable at all times to be the victim of the other's errors, as well as his own. This is a serious limitation and entails much collateral reading outside what is regularly prescribed, if the

deaf student is to get the proper good from the course, and, incidentally, to pass his examination. It may be said that, after all, he is no worse off than those self-taught scholars who have attained great success without a teacher, and that is true; but, on the other hand, these self-taught persons have been seeking knowledge and culture for their own sake, with no examination ahead, and, while we may theoretically deplore "working for examinations," it is nevertheless unfortunately true that present college practice denies a degree to those who cannot pass them. So the fact of the disadvantage remains a disadvantage so far unavoidable.

The Matter of "Stand"

Granting this disadvantage, teachers of the deaf will be interested to know what degree of success Mr. Osgood has been able to attain at Harvard.

As a matter of record, without electing a single "snap" course, he obtained two B's, two C's, and one D in his freshman year—the D being in a difficult mathematics course in which nearly all the students had trouble—and two B's in half courses, which he took in the summer school with a view to graduating in three years. Every one familiar with the Harvard system of marking will recognize that this record is, on the whole, most satisfactory, and any one familiar, not only with Harvard, but also with the education of the deaf, will appreciate what an amount of persistent hard work and energy must have gone into the getting of it.

Just this same patient, persistent effort and energy have characterized his life on the social side, both in school and college. The men at Harvard say that he makes friends because they admire his ability to *do* things—to do them in the face of adverse circumstances. It would be futile to say that his place in college is just what it would have been if he had had hearing—futile, because untrue; but he has a place which gives him the respect of his world and the affectionate friendship and companionship of many of those whose friendship and companionship are the most worth while.

THE BASIS OF THE BINET-SIMON INQUIRY

NON-EXPERT INVESTIGATION, AND ITS RESULTS—WAS THE METHOD SCIENTIFIC?—JUDGING A SCHOOL BY SIX PUPILS OUT OF EIGHT HUNDRED—DR. BINET'S NEW INVESTIGATION

BY ANDERS HANSEN

Direktor den Kongelige Dövstummeskola, Nyborg, Denmark

Editorial Note: THE REVIEW *takes no part in any controversy regarding the merits of the various methods of educating the deaf to a use of their mother tongue. The Association and Bureau, which jointly publish* THE REVIEW, *work in harmony with all methods of educating the deaf; their membership includes representatives of every school of education, and it is accordingly outside of the editorial province of* THE REVIEW *to indulge in any polemical discussions about methods. The Association has only one great vital, moving principle*—the deaf must be taught to speak—*and that principle has been attacked by Messrs. Binet and Simon, who infer that in the majority of instances speech-teaching is a waste of time. Under these circumstances, the following examination by Direktor Hansen of the Binet-Simon investigation, as well as the methods and novel rules of evidence employed by those gentlemen in collating their material, is pertinent in the extreme. One significant fact stands out: Dr. Binet has decided to make his investigations over again*

MUCH discussion has resulted from the declaration made by Dr. Binet and Dr. Simon that in a large proportion of instances the deaf cannot profitably be taught to speak, and that it is likewise inadvisable to instruct them by speech methods. These conclusions were published in "L'Année Psychologique" for 1909 in the report of the investigations conducted by those two scientists.

In France many protests came from distinguished members of the staff of the National Institution for the Deaf. M. Bélanger, M. Liot, M. Germain, and M. Thollon have all written able articles in the "Revue Générale" dealing with the assertions of Professor Binet, while M. Marechelle wrote an article for the daily "L'Eclair" replying to a leader in that paper entitled "Do the Deaf Understand Speech? The Researches of Professor Binet Disprove It." Incidentally it might be remarked that M. Montorgueil, writer of the "L'Eclair" leader, subsequently visited the class-rooms of the National Institution and changed his opinions as to the usefulness of oral instruction, being now an admirer rather than an opponent of that method.

Beyond the French border the matter was taken up in the "Revue Belge" and by "L'Educazione." In the Italian publication Professor Ferreri has vigorously controverted the correctness of the results which Binet claims to have established by his inquiry, contending that the scope of the inquiry was inadequate and the method without scientific basis.

A brief history of the inquiry and of the oral method in France may be necessary in order to understand the significance of this controversy.

A couple of years ago Dr. Binet and Dr. Simon, both members of the Sorbonne faculty, obtained, through the intercession of the government authority, a list containing the names and addresses of orally-educated pupils graduated from two large institutions for the deaf in Paris. These two institutions are the

National Institution, located at 254 Rue St. Jacques, and the Departmental Institution, at Rue Nanterre, in the suburb Asnières.

By the aid of these addresses it was proposed to trace down the graduates and determine, "in a manner having nothing to do with prejudice or antagonism to method," whether the subjects of oral instruction had been trained for self-reliance in after life. Though the field of operation was quite unknown to the two explorers, they felt no inclination or need to go to any educator of the deaf for advice, considering the profession predisposed or personally interested in the case.

The oral method was officially adopted by France, through a governmental decree of 1884, as a more or less direct consequence of the Milan conference of 1880. It had already been accepted at the National Institution some years previous to the ministerial rescript.

Preliminary Restrictions

The first set of addresses furnished by the two institutions proved not to be sufficiently up to date, and a new revised set was furnished, in 1908, containing the addresses of the members of the several classes which had been graduated between 1903 and 1907. For the sake of convenience the two investigators would only examine cases within the precincts of Paris; they also confined the inquiry to the male deaf. Their opponents have objected to this arbitrary arrangement, Professor Ferreri probably most strongly, as inadmissible in a scientific research.

The cases thus examined consist only of deaf persons living in the midst of an agglomeration of other deaf, meeting frequently in their circles and unions, where sign-making prevails to the detriment of lip-reading and articulate speech. The exemption of cases from the investigation of the deaf living in the world of sound made the investigation somewhat one-sided. Professor Ferreri instances meeting a deaf man who had attended a school for the deaf for only a very short and insufficient period, but who had since then lived amongst hearing people. Although his equipment was very modest upon leaving school, he had in the meantime made enormous strides forward, and his former teacher was quite astonished at the progress accomplished.

The other circumstance, that only male deaf were called on, is also open to criticism. The female deaf live, as a rule, in closer relationship with their hearing surroundings than the male, and their advance in speech and lip-reading is correspondingly facilitated. When this class is omitted it has a detrimental influence on the final result.

The inquirers were anxious to deal fairly with the matter at hand, and therefore eliminated all cases designated by the two institutions as not having attained satisfactory results owing to lack of capability. They only wanted to see what could be attained by the congenitally deaf of average intelligence, thus again further restricting the number of cases examined. The supervention of deafness before the age of three years was the limit to be observed in making a classification of congenital deaf. The list of ex-pupils from the National Institution contained 172 addresses, but, after these successive eliminations, there remained only 6 graduates to be examined. The Departmental Institution had given the addresses of 88 individuals, of whom only 14 were looked up in accordance with the limitations of the inquiry, which thus was based on 20 cases out of 260 ex-pupils.

Six Cases Taken out of 800

The National Institution has had a total of about 800 graduates educated after the oral method, out of which only 6 cases have been examined, and from these 6 cases, accordingly, the whole work of that institution is judged.

In one passage Professor Binet speaks of the oral method in the school for the deaf as "an example of an uncontrolled pedagogy." To this M. Bélanger replies that oralism has just the effect of bringing the instruction of the deaf under the

observation, and therefore criticism and control, of the ordinary man.

In the third part of the report the practical results of the oral method are dealt with. With few exceptions the parents of deaf children highly appreciated the attainments of their deaf children. But it so happened the two doctors did not quite believe in these assertions on the ground that they were too optimistic! Professor Binet is accused of preferring the views of outsiders to those of experienced parents. His opponents point out that he accepts the pessimistic words of a former teacher of the deaf, Pastor Vigier, that oral communication with the deaf is not to be relied upon, when he doubts the optimistic assurances of parents of the deaf.

The Three Main Questions

When he quotes the opinion of janitors who deny the capability of the deaf to make themselves satisfactorily understood through speech, Binet's opponents declare that he has left the high-road of science, and they assert that the same can be said when he listens to relatives who declare they are unable to communicate orally with the deaf youth who lives with them, but that they in three weeks have learned the sign language, which they now employ, and when another family was of opinion that signs are preferable to speech. In order to show the value oral instruction has for practical ends, three main points were examined.

1. Are the deaf capable of communicating orally with their relatives?

2. Can they communicate orally with strangers?

3. Does articulate speech constitute any advantage to them of professional or social importance?

No speech-teacher is ignorant of the misunderstandings that very often occur when the deaf are communicating orally with others, but similar mistakes are not unknown in the case of hearing persons, either. How often are not names and addresses given misunderstood? The big stores in cities could give ample proof thereof, for when goods are delivered often the purchasers are not to be found because of misunderstanding of the oral utterances between customer and clerk.

Professor Ferreri remarks that even people with two sound ears and faultless speech have to use a particular designation of numbers when 'phoning, lest misunderstandings might arise. Further, he tells of the difficulties he met with when traveling in English-speaking countries, though he had business only with people in possession of all their faculties. When he told his name he was often requested to explain how it was written, and not seldom he had to spell it before being properly understood.

For his own personal use in examining the deaf as to their capability of understanding a stranger, Professor Binet had selected five sentences covering the most diversified ideas, and without any relation to the moment and situation under which they were spoken to his interlocutors. He spoke slowly and distinctly, and was careful to have the face turned toward the light. When not understood the question was reiterated. It cannot be denied that the results look more than unsatisfactory, and, to a non-expert, they may seem to justify the denunciation of speech-training.

But the heterogeneity of ideas contained in the five test sentences is partly accountable for the poor results. Would not a hearing person be somewhat stupefied if a stranger accosted him and said, "Show me your teeth," "Touch your nose with your finger," "Give me some matches," "Give me some wine," "What did you eat last night"? Nobody having knowledge of the nature of speech-teaching is ignorant of the fact that lip-reading is but a substitute for a wanting sense. But, fortunately, life is also full of the proof of daily usefulness of lip-reading to the deaf.

A Personal Experience

Personally, I can add that when visiting institutions for the deaf, both in French and English speaking countries, I have been able to converse quite freely with entirely deaf persons and exclusively

through oral speech, though my ways of producing the several sounds of the vernacular in cases differed more or less from what they were accustomed to observe. I recall with pleasure the meeting with a young congenital deaf American who was able to understand almost everything I said without reiterations. One of the French teachers of the deaf remarks fittingly: "No one would pretend a wooden leg to be as good as the natural one, but it is none the less far better than nothing at all, and it is just the same with hearing and lip-reading."

Binet does not expressly declare that the oral method is a failure, but he openly confesses he considers it a luxury or an accomplishment for the deaf.

Binet's "Constructive" Criticism

He does not confine himself to a negative criticism of what he believes has been shown through his inquiries, but he also sets forth a proposal to reduce the number of oral failures. The tables he has been provided with from the two institutions in question show the shortcomings of the congenitally deaf of deficient mentality. The figures given by the National Institution for pupils who have profited in less than average degree are, amongst the normal deaf, 23 per cent, and among the defective deaf it amounts to 87 per cent. The corresponding figures from the Departmental Institution are, normal, 6 per cent, and defective, 78 per cent.

That the period when deafness occurs greatly influences the attainments to be reached by oral instruction is generally acknowledged, and it is also evident from the information which the two Paris institutions have furnished. When deafness occurred at one year of age or before, 62 per cent of the pupils profited by oral instruction in an average degree, and when deafness occurred after one year of age, 80 per cent profited to the same degree, the percentage of the subaverage success thus being 38 per cent and 20 per cent respectively.

Professor Binet and his co-worker, Professor Simon, conclude that when the reports show such startling evidence it is absolutely necessary to remedy the present state of things by introducing a committee formed of persons outside the teaching profession to study and examine the attainments in the schools for the deaf, especially of the mentally defective and the congenitally deaf, and to eliminate those from oral instruction who do not derive a proper benefit therefrom. They would also have these pupils instructed by the aid of writing, but with the main stress laid upon training in handicrafts.

The New Investigation

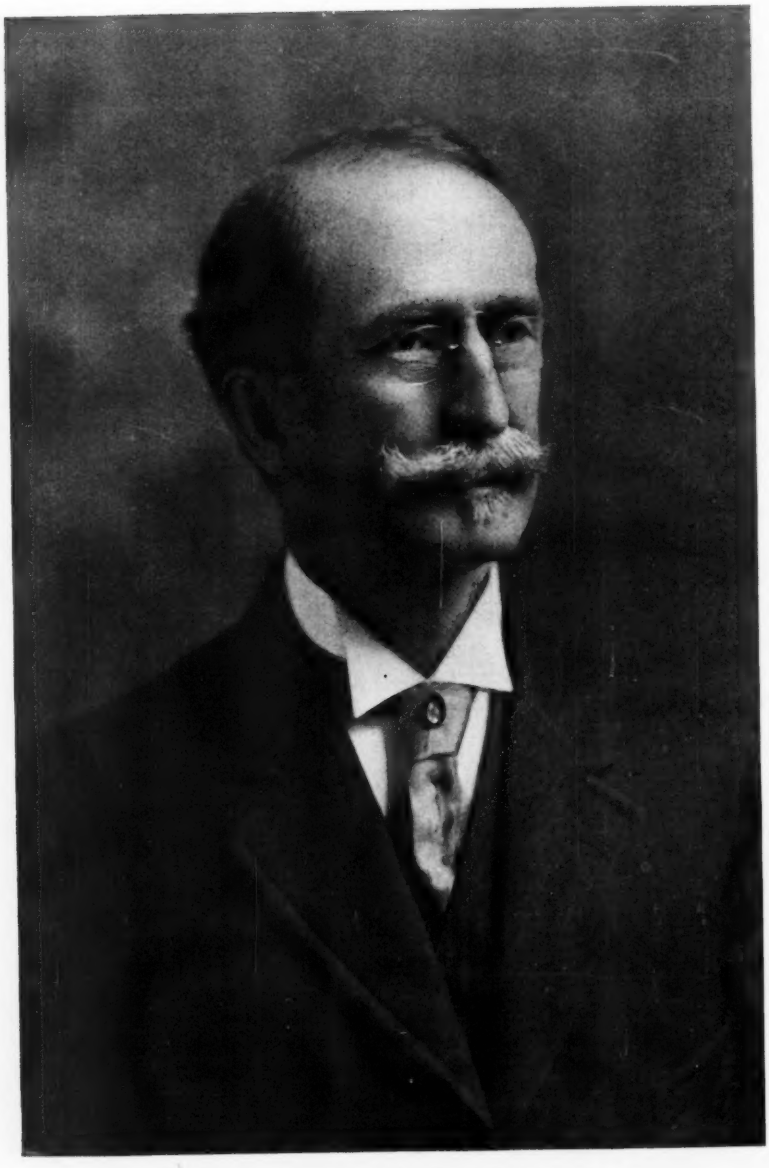
In the judgment of educators of the deaf the recommendation that teachers of the deaf should be precluded from membership in such a committee is inadmissible. Where matters pertaining to the training of the deaf are at stake, the opinion of experts cannot be neglected.

The inadequate classification of the pupils constitutes a long-standing and serious handicap to the work of the instructor of the deaf. M. Bélanger alludes to "Denmark, the country always in the forefront of culture and progress," as "possessing the most ideal classification," adding, regretfully, that the adoption of a similar system would encounter many obstacles in the larger countries.

The opposition to the manner in which the two scientists carried on their investigation has not been without effect. No doubt remains that Professor Binet has been anxious to have the full truth established, but his plan has operated to invite protests and criticism, and the result has been that he has resolved to make the inquiry over again.

Moreover, he has so far changed his mind that he now invites the co-operation of the educators of the deaf in these renewed examinations.

Both science and oral instruction for the deaf would gain by co-operating, in a spirit of mutual understanding and aid, in a thorough, scientific, and impartial research, and such an investigation would no doubt throw a flood of light on a vexed problem of education.



EDWARD MINER GALLAUDET, Ph. D., LL. D.

PRESIDENT GALLAUDET'S RETIREMENT

A PERSONAL APPRECIATION OF THE CAREER, AND THE SERVICES TO EDUCATION, OF THE FOUNDER OF GALLAUDET COLLEGE

BY EDWARD ALLEN FAY, M. A., Ph. D.

Vice-President and Professor of Languages in Gallaudet College

IT was announced on Presentation Day at Gallaudet College that Dr. Gallaudet had determined to retire from the office of President of the Faculties of the College and the Kendall School next September.

Percival Hall, who will succeed Dr. Gallaudet in September next as President of the Faculties of Gallaudet College and Kendall School, is a native of Washington, D. C. His father was Asaph Hall, the discoverer of the moons of Mars, long at the head of the Naval Observatory in Washington, and afterwards Professor in Harvard University. He is a brother of Asaph Hall, now at the head of the Naval Observatory, formerly Professor in the University of Michigan. Percival Hall was graduated from Harvard in 1892, was a Normal Fellow in Gallaudet College during the year 1892-'93, taught for two years in the New York Institution for the Deaf, and, in 1895, became an instructor in Gallaudet College. For several years he has been Professor of Applied Mathematics and Pedagogy and has had charge of the Department of Articulation.

Dr. Gallaudet had also offered his resignation as President of the Board of Directors, but this the board had refused to accept.

A recent contributor to *The Atlantic* writes concerning the difficult and delicate art of "letting go." While those who have been associated with President Gallaudet for many years are sad that they are to be deprived of his inspiring leadership and companionship, they congratulate him that after fifty-three years of devoted service he has the wisdom, the grace, and the heroism to "let go" of his own accord while his mental powers are still vigorous, while he is still young except in years, and while his Board of Directors and his many friends wish him to remain.

Dr. Gallaudet's career marks an important era in the education of the deaf, and it has been one of remarkable success in the highest and best sense of the word. As a young man he set out with a definite aim in view. It was not a selfish aim, but a purely altruistic one. That aim he has the rare happiness to have attained in the highest degree.

Edward Miner Gallaudet was born at Hartford, Connecticut, February 5, 1837. His father was Thomas Hopkins Gallaudet, founder of the education of the deaf in America; his mother, Sophia Fowler, one of his father's earliest pupils in the school for the deaf he established in Hartford. In his veins mingle the blood of doges of Venice, Huguenots of Rochelle, Scotchmen of Edinburgh, Puritans of Hartford. One curious in tracing the heredity of individual and racial characteristics might discover in the ancestral doges his aptness to lead and fitness to govern; in the Huguenots his unswerving devotion to principle; in the Scotch his persistency of purpose; in the Puritans his firm belief in the righteousness of his cause and his readiness to deal hard blows when he feels called upon to fight. Very obvious are the personal characteristics of father and mother. He has his father's intellectual power, gift of persuasion, and philanthropic spirit; his mother's vigorous constitution, personal comeliness, practical sagacity, and radiant vitality.

He was graduated from Trinity College at the age of nineteen, and even before his graduation began his life work as a teacher in the School for the Deaf at Hartford. His purpose, formed while still a student in college and never lost sight of, was to establish an institution

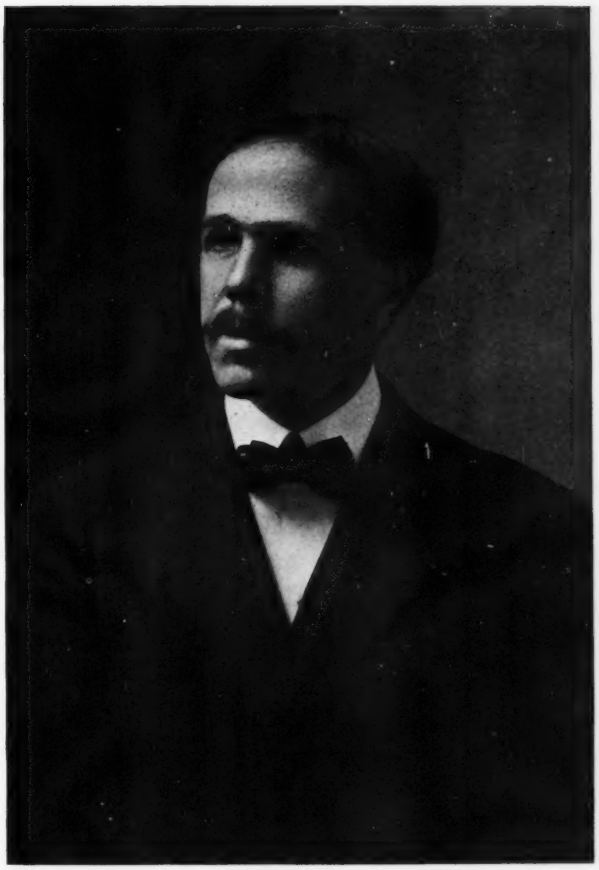
in which the deaf might have equal opportunities with hearing youth for receiving the higher education. Up to that time nothing more than an elementary course of instruction had been possible for them except in rare instances; but high classes had recently been formed in the Hartford and New York schools, and his acquaintance with some bright young fellows in the Hartford high class confirmed him in the belief in the intellectual capacity of the deaf, which he had often heard expressed by his father, and of which he had evidence in his noble and highly cultivated deaf-mute mother. How that purpose should be accomplished he did not know; the only way that then seemed feasible to him was to induce some philanthropic millionaire to endow the proposed college with the necessary means of support, and the desired millionaire did not appear.

Eighteen months after he began teaching at Hartford the opportunity came through an invitation to establish a school for the deaf in Washington, D. C., for which, chiefly through the efforts of Amos Kendall, an act of incorporation had been obtained from Congress. The invitation was only to take charge of a small local school without equipment and without endowment, but he instantly saw in it the possibility of the future realization of his cherished purpose. He was well aware that the immediate task before him would be the building up of the primary school; but he foresaw that when that task had been satisfactorily accomplished and the confidence of Congress had been fully gained, a golden opportunity would be afforded for seeking national aid for a national college for the higher education of the deaf. Seven years later the vision was no longer a dream. The college, afterwards named Gallaudet College, in honor of his father, was established by Congress with the power to confer degrees. Liberal appropriations were made for grounds, buildings, and support, and the work of the college all these years has justified his faith and courage.

Dr. Gallaudet's success in obtaining appropriations from Congress has always been a matter of surprise to those who know how difficult a task this usually is. For him it has not always been easy; he has met with rebuffs, disappointments, and delays; but sooner or later he has received what he asked for. This is partly due to the happy circumstance that for many years influential men like Rufus P. Spalding and Thaddeus Stevens, James A. Garfield and Henry L. Dawes, who appreciated the college work, held commanding positions in the committee on appropriations; but it is chiefly due to Dr. Gallaudet's own personality. "Nobody comes before the committee who makes so favorable an impression upon it as Dr. Gallaudet," Mr. Garfield once remarked, and Mr. William E. Niblack, long a member of the committee and always a good friend of the college, said on another occasion: "Several times when Dr. Gallaudet wanted appropriations, while I very much desired his success, I felt that he had undertaken more than could be accomplished; but somehow, under the influence of that earnest zeal, that even temperament, and the strong arguments which have always characterized his efforts, before the close of the session he would get practically what he desired."

Trusting in the willingness of Congress to provide for the needs of the College by annual appropriations, President Gallaudet has never made special efforts to secure an endowment fund, but several years ago he persuaded Congress to establish a hundred free scholarships, which are the equivalent of a liberal endowment.

Dr. Gallaudet has always been such a strenuous advocate of the "Combined System" that his efforts to promote the teaching of speech to the deaf have not received from adherents of the oral method the recognition they deserve. So long ago as 1867, the year in which the oral schools at Northampton and New York were begun, and when there was no articulation teaching anywhere else in America, he recommended to the Board of Directors of his institution in his



PROFESSOR PERCIVAL HALL,
NEW PRESIDENT OF GALLAUDET COLLEGE

tenth annual report "that instruction in speech and lip-reading be entered upon at as early a day as possible; that all pupils be afforded opportunities of engaging in this until it plainly appears that success is unlikely to crown their efforts; that with those who evince facility in oral exercises instruction shall be continued during their entire residence in the institution." In the following year a conference of principals was held in Washington on his invitation, and it was chiefly through his persuasive arguments that the heads of American schools were led to pass the resolution offered by him that "it is the duty of all institutions for the education of the deaf to provide adequate means for imparting instruction in articulation and lip-reading." In 1886 he was the author of the "California Resolutions," one of which is incorporated in part in the constitution of the American Association to Promote the Teaching of Speech to the Deaf: "That earnest and persistent endeavors should be made in every school for the deaf to teach every pupil to speak and read from the lips."

While Dr. Gallaudet has thus been a leading mover in the introduction of speech-teaching into American schools, he has never believed that the oral method was adapted to the needs of *all* the deaf, and has urged that the language of signs should have a recognized and honorable place in every school.

In 1886, at the invitation of the Brit-

ish government, President Gallaudet appeared before the Royal Commission on the education of the deaf. His testimony is given in full in the report of the Commission, and in "Education of Deaf Children," published by the Volta Bureau.

Dr. Gallaudet is the author of a "Popular Manual of International Law," widely used as a college text-book, and the "Life of Thomas Hopkins Gallaudet." He has also contributed numerous articles to magazines and reviews and published many pamphlets, mostly relating to the education of the deaf. He has delivered frequent addresses on the same subject in the United States and Europe.

In 1895 Yale University conferred upon him the honorary degree of Doctor of Laws, largely in recognition of the value of his work on international law, above mentioned. He had received the same degree many years before from Trinity College and Doctor of Philosophy from Columbian University.

In 1895, on the reorganization and incorporation of the Convention of American Instructors of the Deaf, he was elected president, and at every subsequent meeting has been unanimously re-elected.

While the welfare of the deaf has always been the object nearest to Dr. Gallaudet's heart, he has not neglected his duties as a good citizen. He has been active in promoting civil-service reform; in educational matters as a trustee of George Washington University and Howard University; in religion as a trustee and elder in the Church of the Covenant and director and president of the Young Men's Christian Association; in literature and science as a member of the Literary Society, the Historical Society, the Philosophical Society, and many other kindred organizations, in most of which he has been honored with election to the highest offices. Among his intimate friends have been the best men prominent in political and social life during his long residence in Washington.

Dr. Gallaudet's life has not been free from struggles, trials, and disappointments, but satisfaction and joy in his work have greatly predominated. The vision of his youth has been more than realized in the beautiful buildings and grounds at Kendall Green and the goodly company of deaf men and women who have gone out from their walls year after year to take places beside their hearing fellows in the higher fields of usefulness. The gratitude of those for whose welfare he has labored, the love of his associates, the approbation of the public, while they have never been the object of his efforts, have constantly attended them, and now, at the age of seventy-three, while the grasshopper is not yet a burden, desire does not fail, and the years when he shall say I have no pleasure in them seem not to draw nigh, he voluntarily and cheerfully "lets go," resigning the power he has held so long and wielded so well into the hands of a young, vigorous, and every way competent man of his own choosing and training, in the confident belief that the good work of the institution he established and has carried on will not suffer but benefit from the change.

"Who is the happy warrior? Who is he
Whom every man in arms should wish to be?
It is the generous spirit who, when brought
Among the tasks of real life, hath wrought
Upon the plan that pleased his childish thought;
Whose high endeavors are an inward light
That makes the path before him always bright;
And who, if he be called upon to face
Some awful moment to which Heaven has joined
Great issues, good or bad for human kind,
Is happy as a lover; and attired
With sudden brightness like a man inspired.

This is the happy warrior; this is he
Whom every man in arms should wish to be."

ANNUAL MEETING OF THE A. A. P. T. S. D.

THE annual meeting of the American Association to Promote the Teaching of Speech to the Deaf was held at the School for the Deaf, Mount Airy, Philadelphia, at 10 A. M., Friday, May 6, 1910, with Dr. A. L. E. Crouter, president, in the chair.

The minutes of the previous annual meeting, held in Chicago, were read and approved.

The President stated for the information of members that the Committee on Pensions is continued, and, according to the last report received from Mr. Johnson, Chairman of the Committee, there seems to be some prospect that a fund will be raised, so that those who are now under sixty years of age may have hope of enjoying a pension out of the income of the fund.

The Secretary then read the annual report of the Treasurer, as submitted to the Board of Directors at its January meeting in New York.

Retiring Directors Re-elected

The President announced as the next business in order the election of five Directors to take the place of the five Directors whose term of office would expire with the present meeting.

The Secretary then read the names that had been placed in nomination, as follows: Caroline A. Yale, Edmund Lyon, Job Williams, Richard O. Johnson, and David Fairchild. Upon motion, the Secretary was directed to cast the ballot for the persons named for the office of Director of the Association for the term of three years. The ballot being cast, the President announced that the five nominees had been elected to the office of Director of the Association for the ensuing term of three years.

The President stated that the Board of Directors is very desirous of increasing the membership of the Association. Any one paying the membership fee of $2.00 is entitled to election and to receive THE VOLTA REVIEW. Steps are being taken to improve the magazine, and the prospects are favorable to its becoming a very helpful publication. Certainly members and teachers interested in speech-teaching ought to join the Association and make it as strong as possible.

The question of the place for holding the next summer meeting, in 1912—the last having been held in 1909, in Chicago—was discussed informally, the following places being in turn spoken of: The Columbus, Ohio, School; Atlantic City; a hotel in the White Mountains, and the Mount Airy School. The President stated that the selection of the place would be made by the Directors from requests for the meeting that may be received.

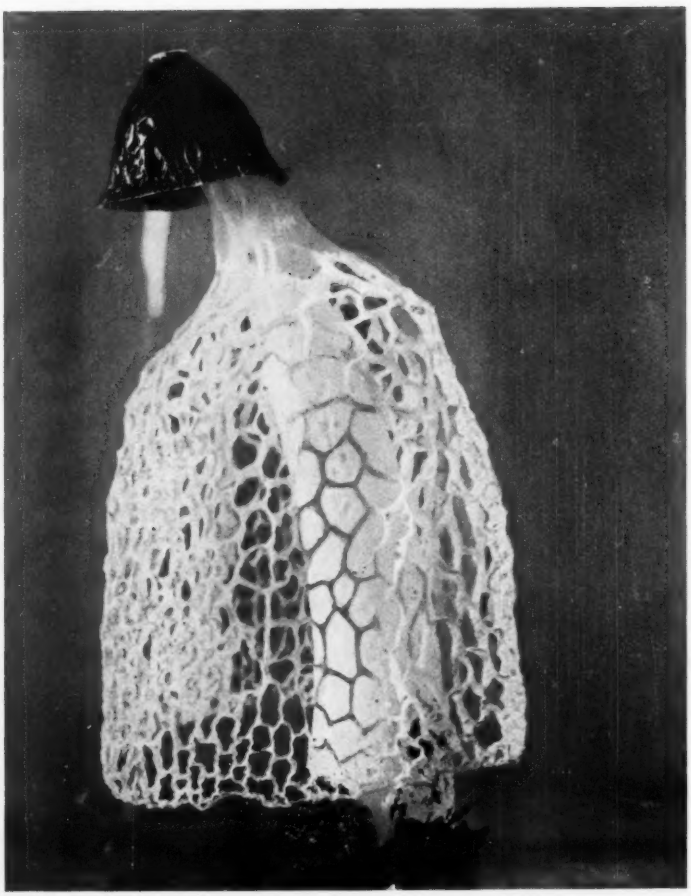
Resolutions on Dr. Gallaudet's Retirement

Under the order of new business the following resolutions were presented and passed by unanimous vote:

Resolved, That the American Association to Promote the Teaching of Speech to the Deaf learns with deep regret of the resignation by Dr. Edward Miner Gallaudet of his position as President of Gallaudet College, which institution he founded and which has been so ably conducted by him for the past forty-six years. In his retirement from active work, Dr. Gallaudet bears with him the hearty congratulations of all his fellow members in this Association upon the success that has attended his efforts for the advancement of the education of the deaf in America. It is their earnest wish that he may live long and in health to enjoy the respect and affection in which he is held by his professional brothers, and by the deaf and their friends everywhere.

Resolved, That a copy of this action be sent to Dr. Gallaudet, and that they be published in THE VOLTA REVIEW and The American Annals of the Deaf.

MARTHA C. BELL.
BARTON SENSENIG.
J. A. MCILVAINE, JR.
A. CLARENCE MANNING.
S. G. DAVIDSON.



So far as is known this is the first photograph published, on this side of the Atlantic at least, of "THE DICTYOPHORA"

David Fairchild, M. Sc., in charge of the Department of Foreign Seed and Plant Introduction, Department of Agriculture, writes regarding the accompanying picture:

"This mushroom, the 'Dictyophora,' or 'net-bearer,' grows in the jungles of Java, where it frequently attains a height of 6 or 8 inches. I tried to photograph it by time exposure, but failed, for the reason that it grew so rapidly during the exposure that the outlines were blurred on the plate! The accompanying photograph was accordingly taken by 'quick exposure,' almost a snap-shot.

"'Dictyophora' propagates itself by means of insects, and its whole appearance is accordingly designed to appeal to the eyes and appetites of flies. Both the stem and the billowy veil or 'net,' from which it gets its name, are pure white—a color which is most attractive to the fly—while the hood at the top of the stem consists of a greenish, sticky mass, that gives out a vile stench of meat in the last stages of decay.

"This odor, which can be detected for rods, attracts swarms of flies, who gorge themselves on the mushroom in the belief that they are enjoying a particularly delicious bit of putrefaction. As a matter of fact they are only eating millions of mushroom spores, which are deposited elsewhere and provide for the propagation of this species."

THE SUMMER VACATION

THE MOUNTAINS, HOME OF LEGEND, SONG, AND STORY—THREE CLOUD-CAPPED HAUNTS FOR THE NATURE LOVER; CAROLINA, TEMAGAMI, AND THE MAINE WOODS

BY KENNETH KNOWLES

A SEA OF CLOUDS—NORTH CAROLINA

IT is probable that nine out of every ten Americans living on the coast experiment, sooner or later, with a vacation in the mountains, and in nine instances out of ten the investigator finds that his experiment has solved, once and for all time, the eternal question of the summer vacation (always providing, of course, that he has chosen his mountain wisely).

The hills, the hills! "Home of the mountain goddess, Liberty!" Mother of patriots, nurse of heroes, eyre of the eagle Muse, mentor of the Delphic Ones, seat of the Olympic Gods! Possibly one reason why the tradition, history, poetry, and religion of the white race pivot about the mountains is that the first home of all the white races was the heaving, frozen Himalayan plateau of the Hindu-Kush.

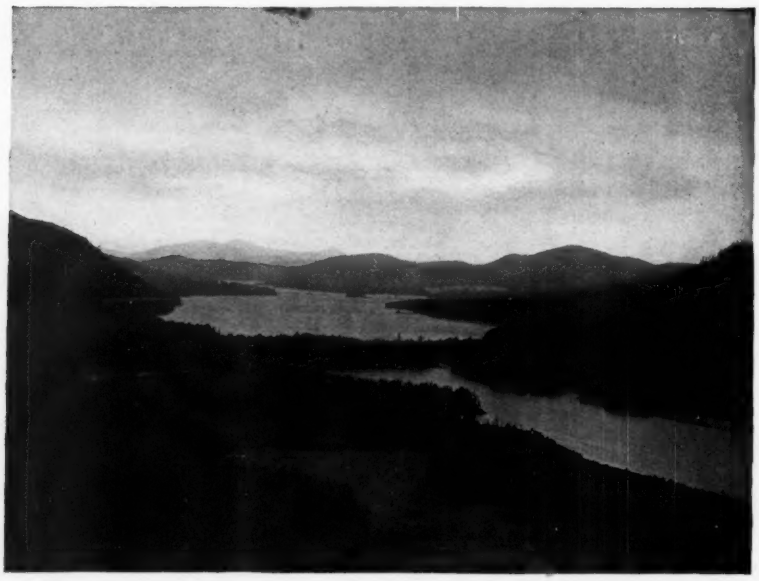
At any rate, your true American vacationist who once experiences the beauties of life under the ridge-poles of the world—the crisp nights, the glorious days, the limpid, icy streams, the shadowy masses billowing steep on steep into the ultimate grey of the Empyrean—that true son of the Aryan patriarchs will have none other life so long as lasts that all too meager span in which he can call himself his own master. And, at the end of that brief sojourn on the heights, he returns to his fellows with a vast compassion for any other spot in the world but the mountains.

"The country?" you suggest. He lifts an eyebrow, and you continue hastily:

"Or the seaside?"

The seaside! What are the puny breakers of the sea compared with the cloud-spume of his mountain retreat?

"Faugh!" he snorts. "Ever been to Atlantic City? Sand-pile. Soaks up heat like a sponge. Flies, mosquitoes, landlords. Sea-breeze smells of cheap cigars, and the land-breeze—phew! I'd



A PERSPECTIVE IN MAINE

rather be in the fiery furnace with Shadrach, Meshach, and Abednego treading out live coals barefooted."

Within a 24-hours' ride from some city on the Atlantic seaboard, centrally located with respect to the railroads—as, for instance, New York city—there are located three mountainous areas which still retain all, or nearly all, their stern primeval beauty.

DRINKING WATER FOR THE MOUNTAIN CITY

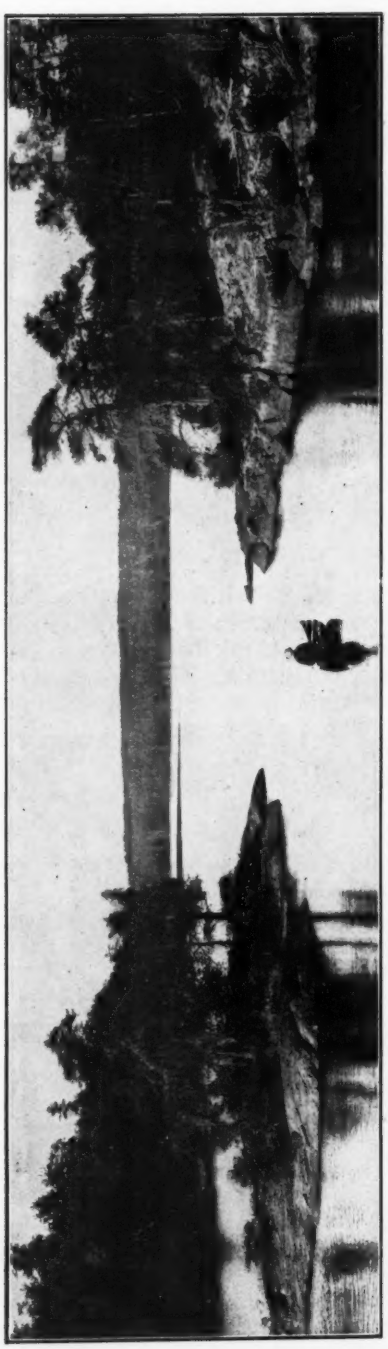
The mountains about Asheville, N. C., are possibly the nearest to civilization and the best equipped with luxurious hotels, set in the midst of rugged scenery. There are no less than 43 mountains in North Carolina over 6,000 feet high, and some idea of what this elevation means is gathered from the picture, called "A Sea of Clouds," which was forwarded us by the Asheville Board of Trade. This region is so beautiful that the proposal is now before Congress to include it in an Appalachian National Park of about 12,000 square miles. While Asheville is a bustling little city of some 28,000, with every convenience that American enterprise can give it, the nearness of the forest primeval may be judged from the accompanying picture of the mountain torrent that furnishes it with its water.

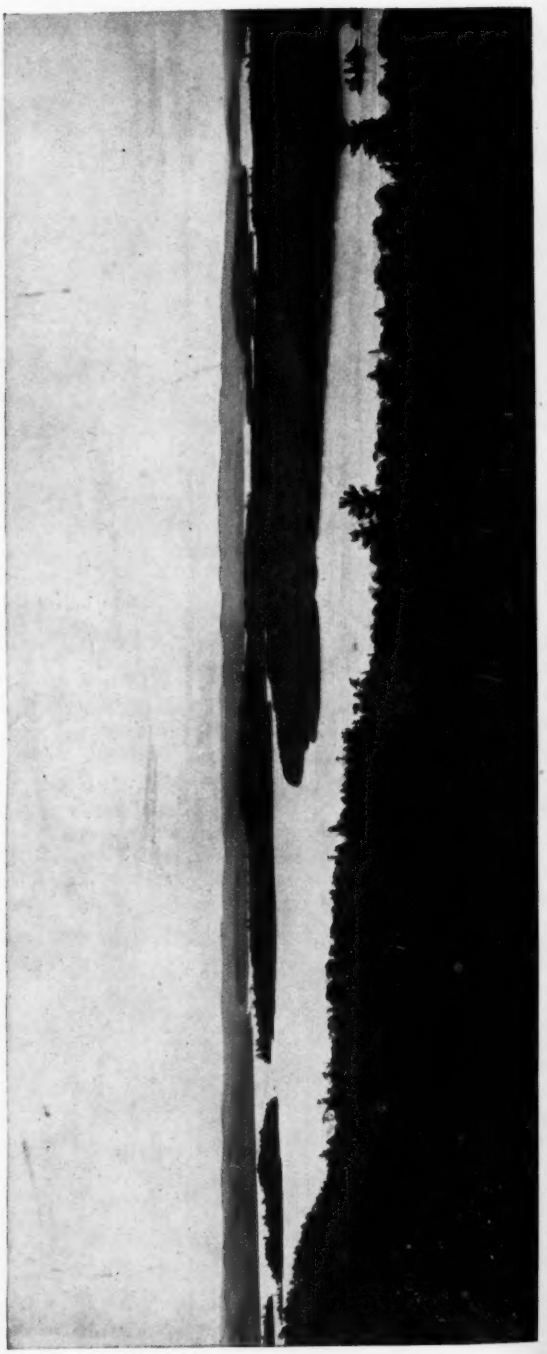
Far, far to the frozen North, in New Ontario, Canada, lies the Lake Temagami country, which has just been opened to the nature lover by the Grand Trunk

A BUCK "SNAPPED" IN MIDSTREAM—MAINE

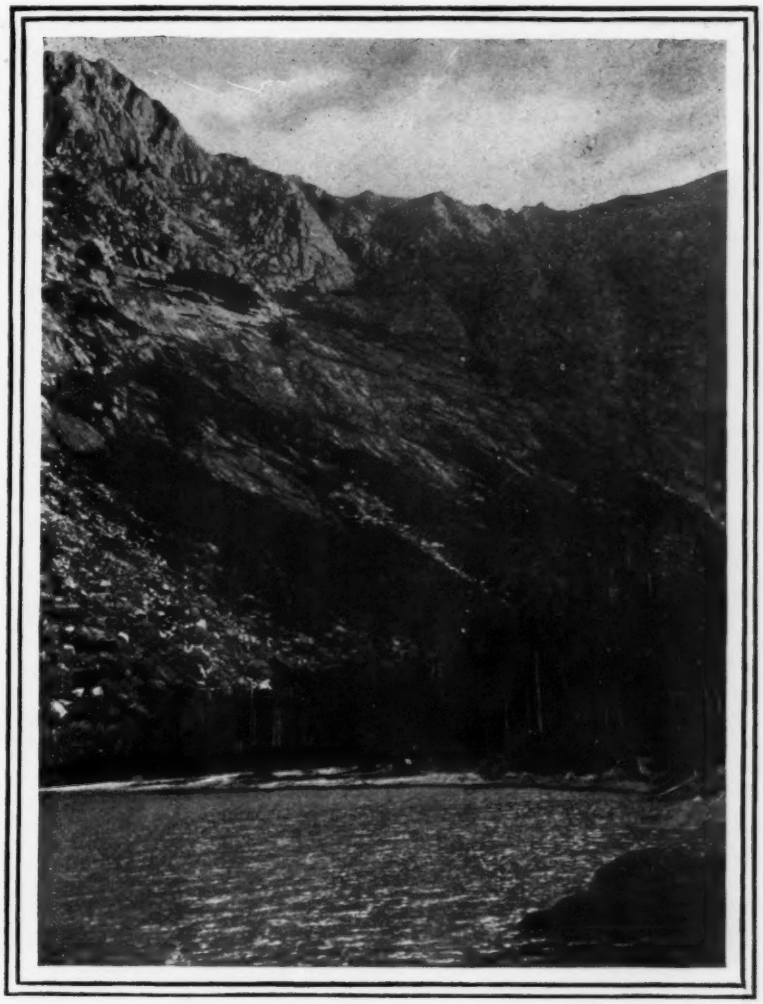
Railway. Up to within very recent years this region was an untrodden wild, visited only by Indians and the Hudson Bay Company's war canoes, but today it can be reached from New York within 24 hours. The region is, however, still in the condition of a virgin forest, and will be kept so forever, as the entire tract of about 60 by 50 miles has been withdrawn from settlement by the Canadian government. The scenery of this marvelously beautiful country is diversified by over 100 lakes, of which the largest is Lake Temagami. This body of water covers 100 square miles, with a shore-line so indented as to give a total length of 3,000 miles, and on its ample bosom there nestle some 1,400 islands. The accompanying pictures of Lake Temagami and the Lady Evelyn Lake were taken by the Grand Trunk's photographer, as was also that showing one afternoon's catch of

THEIR FIRST SIGHT OF MAN—MAINE





LAKES IN THE TEMAGAMI REGION



BENEATH MT. KATAHDIN

bass in these wonderful fishing waters. The entire region is the home of big game, both on sea and land, the list including moose, caribou, red deer, bear, beaver, black bass, trout, and pike.

Though 300 miles north of Toronto, the weather during the day is said to be warm and balmy, with little rain, and the nights pleasantly cool for sleeping.

Age doth not wither nor custom stale her infinite variety, say the lovers of the Maine country. The woods of Maine have long been known to every one who casts a rod or draws a bead, and its hunting, its fishing, and its scenic beauty are as little impaired today as when the Bangor & Aroostook first pierced this trackless wilderness, more than 15 years ago. It is still the country which Arnold and his few hundred followers traversed in that bitter Revolutionary time, in their gallant dash to capture Montreal—a country covered with dense forest for 15,000 square miles, dotted with 1,500 lakes and ponds, and watered by 5,000 streams.

In Arnold's time the game of the region—the moose, the deer, the black

AN AFTERNOON'S CATCH OF BASS—TEMAGAMI

bear, the trout, salmon, and bass—was so plentiful that the entire expedition of several hundred men, proceeding in the dead of winter, actually found themselves able to live off the country, and today it is probable that the wild creatures of wood and stream are still almost, if not quite, as abundant as they were 135 years ago. As one paddles up some Maine stream, through a forest frequently inaccessible by any other way than water, deer are occasionally discovered drinking at the margin, and so little have these animals been disturbed by man that it is sometimes possible to photograph them before they make their escape. Two such photographs, taken by a photographer of the Bangor & Aroostook, are here reproduced, together with other illustrations from the same source, that show the rugged grandeur of this region.

And so, for those who would leave the sea-shore or the country side for the mountain and forest, there still remain three sections in our eastern country which today are much as our fathers found them.

ɐlɯoʇ

ɐɔɹoʇɐɟ ɹnoɯuɐɯɹoɯ ɯɹɐ ɹɐʇɐ ɯɐ ɹnoʎ ɟo ɯɐɹɟ ɐ ɯoɹɟ ɹɐʇɐɹ ɐ ɯɐɯ ɐ ɟo ɯɐɹɟ ɐ ɯoɹɟ ɹɐʇɐɹ ɐ ɯɐɯ ɐ ɟo ɯɐɹɟ ɐ ɯoɹɟ ɹɐʇɐɹ ɐ ɯɐɯ ɐ ɟo ɯɐɹɟ ɐ ɯoɹɟ ɹɐʇɐɹ

BYWAYS OF DISCOVERY

NOVEL FACTS IN SCIENCE AND NATURE—PARAGRAPHS OF INTERESTING INFORMATION GLEANED FROM EVERYWHERE

The old saying that "white cats with blue eyes are born deaf" has been demonstrated to be scientifically correct.

The United States Fish Commission has found that the average oyster eats ten cubic millimeters (13.08 cubic yards) of food per day, and, in obtaining this nourishment, filters 30 to 36 litres of water. One United States liquid quart equals .946 litre. If the water in which the oyster lives be contaminated the oyster itself will be permeated with the contamination within 24 hours.

The British Deaf Times is authority for the statement that a club of society women, about 100 in number, has been formed in Berlin, the principal condition to membership in which is that the applicant must be deaf.

"The Scientific American" tells of a malting concern that passes all its grain over a set of electro-magnets before preparing the product for shipment. This precaution is taken for the reason that most fires in flour-mills, the cause of which is unknown, are probably due to the presence of nails or other iron particles in the grain that produce sparks upon striking the steel rolls of the mills and thus ignite the finely pulverized material about them.

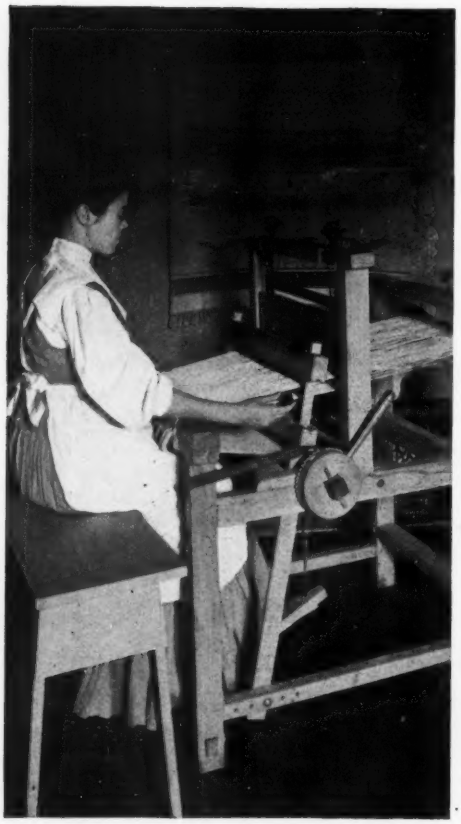
"MUSIC," A PANEL BY BELA L. PRATT, FOR THE BOSTON OPERA HOUSE

Most balloons are colored yellow, for the reason that that color best protects the rubber sheathing against the disintegrating effects of light.

A diamond field has been found in Arkansas which produces stones said to be fully equal in quality to the gems that come from the famous mines of South Africa.

The famous Venetian gondola, running under its own power, is the latest type of motor-boat to be introduced into American waters.

A number of manufactories which use soft coal have installed a wooden tank between the boiler and the chimney in which an atomized spray of water holds the soot from escaping. About one barrel of soot is obtained from five tons of coal, and this by-product furnishes the basis for about five barrels of excellent roofing paint.



A BLIND GIRL AT A TAPESTRY LOOM

Weaving is taught to the blind in the Cambridge Art Fabric Shop under the direction of the Massachusetts Commission for the Blind. Many of the designs woven into the fabric, entirely without the use of eyesight, are said to show marked originality on the part of the blind weavers. The accompanying illustration shows a blind girl at work on her loom.

In Russia cremation is contrary to law.

The agricultural experiment station of West Virginia is showing the farmers of that State how they can make money by turning abandoned mines into mushroom farms. One such mine, near the State farm at Morgantown, produces from $8 to $10 worth of mushrooms a day.

A new kind of silk-worm has been found in Assam which produces its cocoon in such a way that the silk can be obtained from it without killing the insect. The commercial possibilities of this silk-worm, the native name of which is "eri," are being developed by the British government in India.

The United States Treasury officials are experimenting with a new kind of paper on which to print the Government notes. The new paper is much softer than that now used and has the additional advantage, it is said, of requiring but 48 hours for the drying of the ink, instead of some 60 days, as at present.

Wireless telephones have been installed in a number of Western mines, and this appliance will, it is thought, materially assist in reducing the number of such fatalities as occurred after the Cherry mine disaster. By the aid of portable conductivity wireless sets, miners who have been penned in as the result of an explosion or other mishap can telephone to the search parties their exact location, thus enabling their friends to reach them before they have suffocated or starved to death.

Italy and France are now planning the joint construction of a tunnel through the Alps which, if constructed according to present specifications, is to be the longest in Europe. The tunnel is to be run under the Sorret Pass, and will be twice the length of the famous Simplon tunnel, which is almost 20,000 meters long.

The cinematograph has now found a place at La Scala Opera House, Milan, where it has been used with thrilling effect in the *Damnation of Faust,* Berlioz's masterpiece.—[The Étude.]

The Oldest Olive Tree.

The accompanying illustration shows the oldest olive tree in the world, so far as the age of any of these trees can be established by documentary evidence. This tree is located near Syracuse, Sicily, and the records of that town indicate its existence as far back as 1,100 years ago, and even in that far-off period the tree was considered to be of great age.

The olive tree is of very slow growth, but, once having attained maturity, it maintains its vigor for hundreds of years. Some specimens on the Italian peninsula date back to the ancient Roman Empire, and even to the days of the Roman Republic, according to local legend, but these assertions cannot be verified by any documentary evidence.

One feature of this picture is the grotesque face, which is formed by various holes and irregularities in the trunk of the tree.

Photograph by David Fairchild

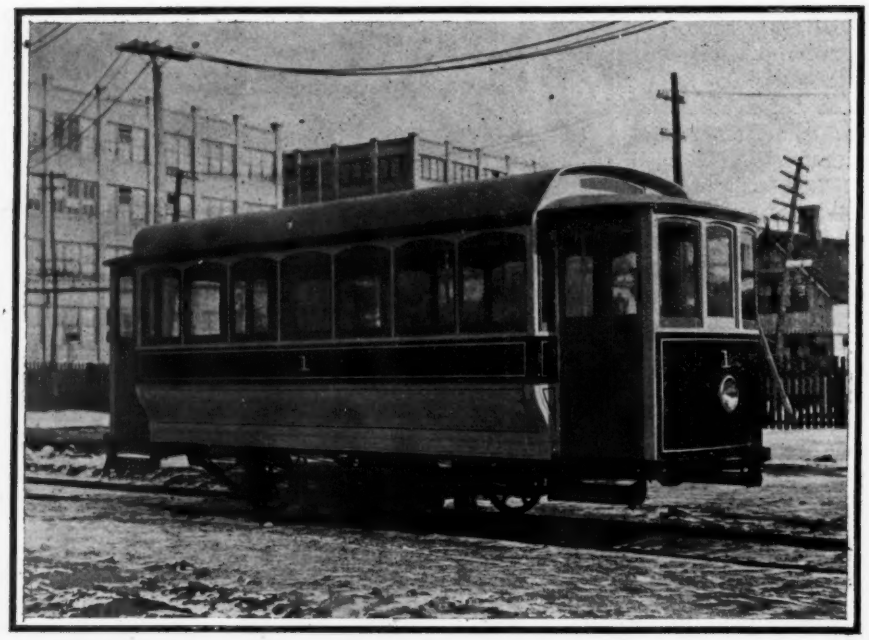
A TREE ONE THOUSAND YEARS OLD

According to a recent estimate some 300,000 human beings live in the polar regions—an average of one person to every ten square miles. The frozen zone is thus as thickly populated as was the whole American continent north of the Gulf of Mexico when it was first discovered by white men.

Several Indians have petitioned the University of New York to admit Pocahontas to the Hall of Fame connected with that institution. So far the only women admitted have been three teachers, namely, Mary Lyon, Maria Mitchell, and Emma Willard.

A German device, called "the duplex compass," gives the approximate latitude and longitude of any place where it may be used by indicating the horizontal intensity of the earth's magnetism. Hitherto, when it was impossible to take the ship's position by the light of the sun, the only method by which the mariner could find his way across the ocean was by dead reckoning, a process of calculation subject to great uncertainties, for which it is thought that this new device will prove an efficient substitute.

A telephone relay has been invented by the aid of which the beating of a woman's heart in London could be heard by her physician on the Isle of Wight, 100 miles away. It is anticipated that this invention, among other things, will allow the physician to prescribe temporary relief treatment in acute cases before he leaves his office to attend on the patient in person.



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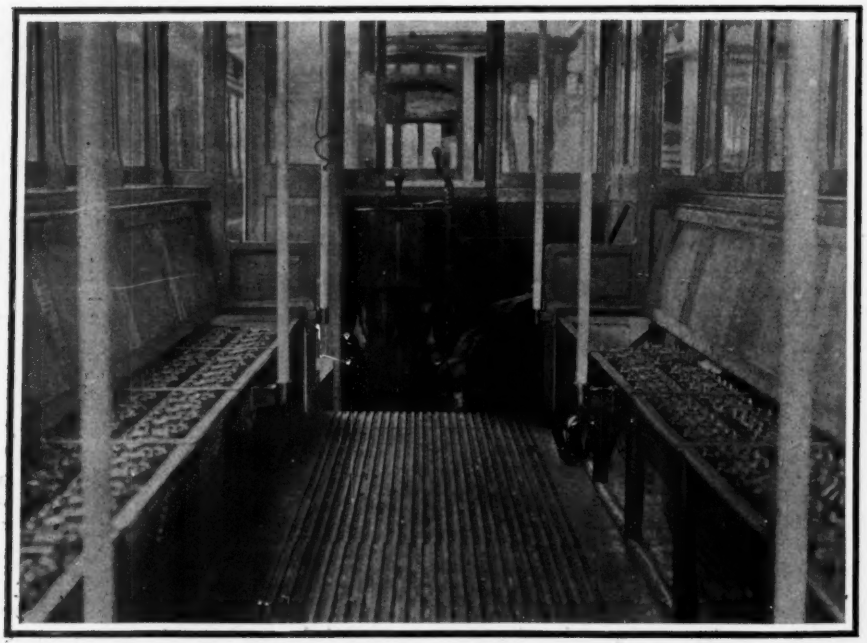

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TWO VIEWS OF THE EDISON STORAGE BATTERY CAR

Wireless and Trackless Trolley Cars

Recent improvements in trolley cars include the Edison storage-battery car, which, like an automobile, is run by its own power, and the trackless trolley car invented by Herr Ludwig Stoll, of Vienna. Both types of vehicle are in successful operation. Of the Edison cars, no less than 16 have been ordered by the officials of the Twenty-eighth and Twenty-ninth Street Crosstown Line, in New York, after a thorough test, which has proved that Edison's car costs only 4.3 mills a mile for power, as against 5 cents per mile for the old type.

When the Edison car is in full operation there will be no charges for maintenance except those incident to the upkeep of the tracks and rails, as the cars generate their own power, thus rendering unnecessary the expensive central powerhouse and the overhead wires or underground conduits through which the power is carried to the present type of car. The Edison type of trolley car is so cheap to run that it is now possible to build lines in many parts of the country which were formerly too thinly populated to support a traction system of the old type.

The backers of Herr Stoll's invention are also advancing very broad claims in the foreign press for the trackless trolley car. In the Stoll car the electric power is conducted through a flexible cable instead of through a rigid pole, so that it is possible for the vehicle to move as far as 64 feet to one side of the wire and accommodate itself to any congestion of traffic. With well-built, strong roads the car can run without any track at all. The Stoll car is now in use in 6 cities of Austria-Hungary.

Water can be sterilized by rays of light, according to the process of a French inventor, who passes the liquid through a spiral tube around a long mercury vapor lamp. The violet and ultra-violet rays through which the water passes have been found to kill all the germs in it.

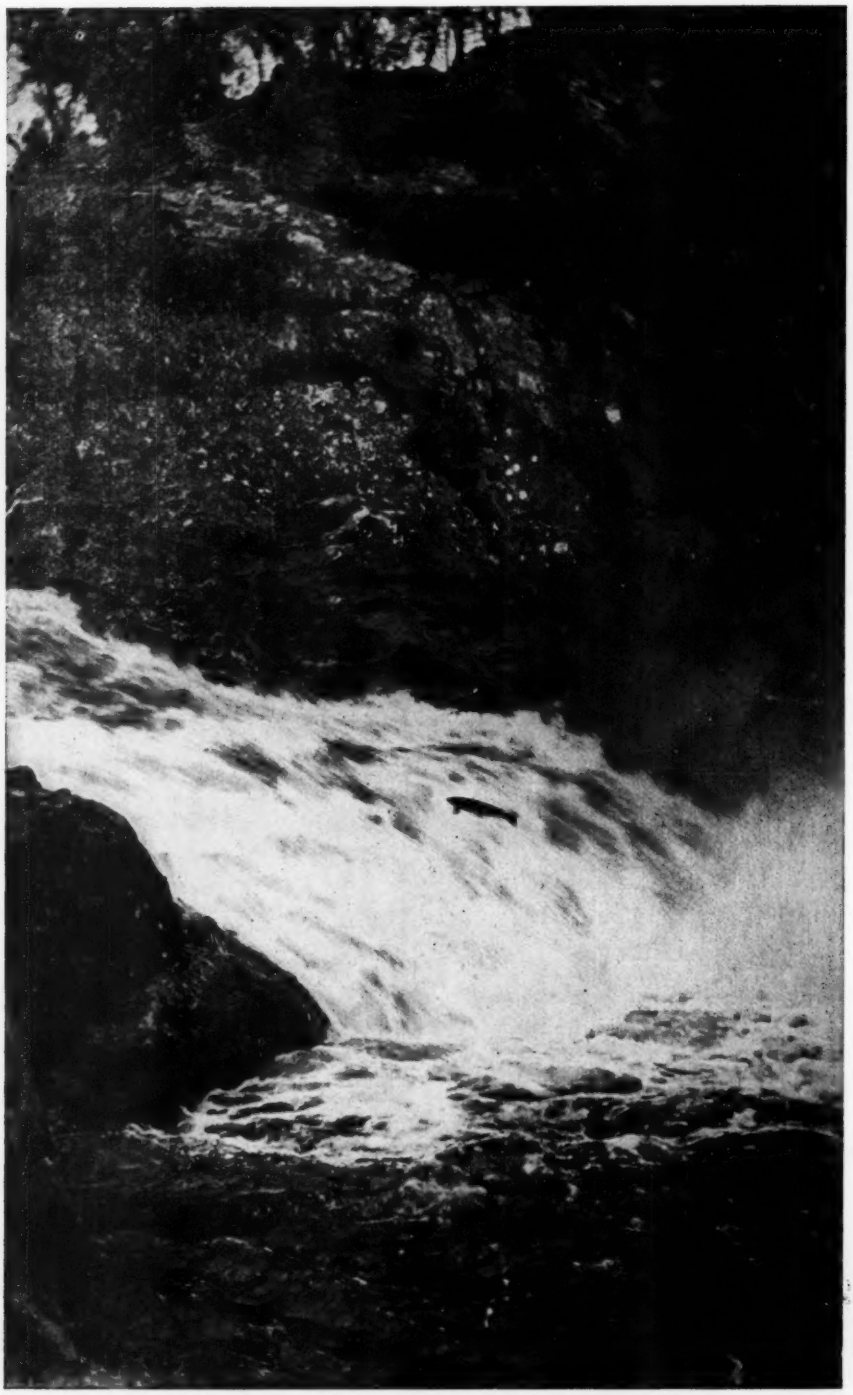
Courtesy of The Hardware Dealers' Magazine

A HUMAN MONKEY WRENCH

One of the costumes worn at the carnival held in connection with the Boston Convention of the New England Retail Hardware Dealers' Association

Natural Soap

Lake Van, Asiatic Turkey, is so full of potash, according to one traveler, that the natives can wash their clothes in its waters without the use of any manufactured soap.



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HOW THE SALMON PASSES A WATERFFALL

Notes on Education.

At the age of 70 years, Emil J. Meyer, a teacher, of Geral, Mo., has entered the University of Missouri to study music, agriculture, and history, thus nearly ranking with Cato, who took up the study of Greek at 80.

On January 1, 1913, English will become the official language used in all the law courts of the Philippine Islands. Preparation for the change is now being made by conducting instruction in the schools entirely in the English language.

The desirable temperature of the school-room is 60 degrees, according to Supt. Ella Flagg Young, of the Chicago schools.

The people of this country are said to spend $500,000,000 a year on candy, or $125,000,000 a year more than they do on schooling.

A school-teacher in St. Paul, Minn., has started a class in good manners which is said to number nearly a thousand members.

In 1800 the average American had received 82 days' schooling; today the average has risen to nearly 1,100 days.

The business policy of those who direct our theaters, in turning the stage from its educational mission to the presentation of demoralizing plays, has met with a severe check from William J. Gaynor, mayor of New York, who has just refused to renew the license for one of the biggest theaters on Broadway. "The people of this city have had enough of false and nasty theaters," Mr. Gaynor said.

A Jumping Salmon

The picture on the opposite page is a snap-shot, enlarged without any "retouching," of a salmon trying to leap the falls of the River Shinn, on Andrew Carnegie's estate at Skibo, Scotland.

WILLIAM J. GAYNOR

Mayor of New York, who aided the cause of moral education by refusing to renew the license of a theater that presented "broad" plays

The fish was about 2½ feet long, and the falls were about 12 feet high. According to "The National Geographic Magazine," from which this picture is reproduced, the fish repeatedly jumped 6 feet above the level of the lower stream, but the volume of water in the fall was such on that day that the salmon was always hurled back.

The excavation work at Panama has already resulted in removing more than the 103,795,000 cubic yards of material which, according to the original estimates, would suffice to give us an open waterway between the Atlantic and Pacific. Further enlargement of the canal's capacity, later decided upon, necessitates the removal of about 71,000,000 additional tons of earth.

Copyright, 1910, by The Youth's Companion

FRANZ HALS'S PORTRAIT OF HIS FAMILY

A Trebly Interesting Picture

The highest-priced painting in the world is said to be Franz Hals's painting of his family, for which, according to an unofficial account, Otto H. Kahn, the New York banker, paid $500,000. Kuhn, Loeb & Co., of which Mr. Kahn is a partner, and J. P. Morgan & Co., are the two greatest private banking firms in the country, and it is interesting to note that the business competition between them was, in this instance at least, continued into the realm of art, as Mr. J. P. Morgan was said to have offered $350,000 for this painting.

This painting, also, is interesting from another angle, as being the first work of art imported under the new tariff, which admits works of art more than 50 years old to come into this country duty free. The Hals painting came in under this category, with a wide margin to spare, as the artist lived about 250 years ago.

As illustrating the growth of the interest in Hals's art, it is said that in 1832 this painting was bought in a London auction-room for $250, while only about 50 years ago another of his best-known paintings sold for about $10,000.

Millet's "Angelus" brought $200,000 a few years ago, and at that time it was thought that the high-water mark in prices for pictures had been paid. None now ventures a like prediction.

Oil as a Fuel for Warships

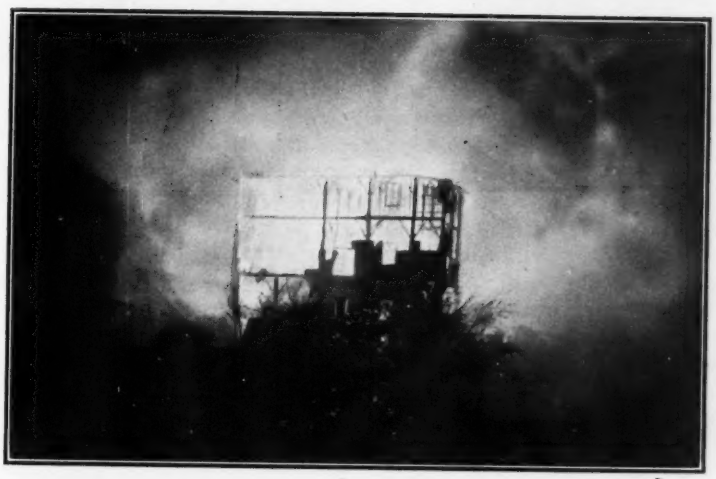
The battleship *Florida*, now nearing completion at the Brooklyn Navy Yard, will be equipped with an oil fuel plant at a cost of $30,000, and will carry about 3,000 tons of fuel, of which 500 tons are to be oil. The United States Navy and the Navy Department will soon establish oil depots along the Atlantic and Pacific coasts.

The advantages of oil fuel in a navy are set forth as including cleanliness, elimination of smoke, gain in speed, less manual labor, increase of steaming capacity, a lengthening of the life of the boilers in a warship, a wider range of action, ease of conveyance from supply-ship to warship, especially at sea; economy of fuel space, etc. In the respect of supply the United States has a great advantage over other nations in its extensive known oil-fields.

An Airship Mail Service.

A. Brodbeck, president of the Aero Club of Utah, wants a contract to run an airship mail service from New York to London via Peking and Moscow. Mr. Brodbeck says he can carry the mails at an average speed of 40 miles an hour in a Zeppelin dirigible balloon, for the purchase of which he is now negotiating. The first application to run an airship mail service was received by the Postal Department in 1850. Other novel schemes for the quick transmission of the mails include their delivery by a system of overhead wires and by relays of electric power plants.

Hugh L. Dickson, of San Francisco, Cal., general counsel for the Brotherhood of Locomotive Engineers and Firemen, used to be a railroad fireman, and, while so employed, lost both his hands. When Mr. Dickson was admitted to the bar of the Supreme Court of the United States a few weeks ago, he signed the roll of attorneys by holding a pen between the stubs of his arms.



Courtesy of The Modern Miller

A FIRE IN A FLOUR MILL

These splendid photographs, taken at night, show the plant of the New Ulm Roller Mill Co., of New Ulm, Minn., totally consumed

REMINISCENCES OF A RETIRED EDUCATOR

BY RICHARD ELLIOTT, M. A., L. H. D.,

Sometime Headmaster of the Royal School for Deaf Children, Margate, England

III

LIFE IN LONDON

MY position for the time was a pleasant one. The principal school difficulty was irregular attendance, due to the frequent employment of the children in the fields. Some amount of interest in the work of the schools was shown; but here, as elsewhere where agriculture was the principal industry, employers of labor were very lukewarm in the cause of education for the lower classes, if they were not openly hostile. To them its tendency seemed to be to obstruct the labor market and indispose the workmen for the ordinary routine of daily work. In country places like the present, where there was an active clergyman, with strong views as to its advantages, public opinion, with the above named exception, became influenced in its favor, and thus considerable pressure was exercised upon parents to send their children to school and keep them, as far as possible, regular in attendance.

Fortunately, many men in the country districts were equally active in the cause, and in consequence of their exertions most of the village children at this time benefited in some degree by the provision made, imperfect though it may have been in general. The contrary was the case, I am afraid, in the poor districts of the large towns, where many children grew up entirely uneducated.

My observation leads me to the belief that, at this time, strenuous attention being paid to the essential elements of education in these respects, the general average of attainments of those who attended school with any degree of regularity was as high as now. Of course the curriculum was less ambitious and extensive, and the great advantages of the present lavish expenditure on buildings, books, apparatus, and experiments were unknown; but, notwithstanding this, I do not think the pupils in general of that time were, in essential matters, much, if at all, behind those of the present generation.

Where the material provision for education was so precarious, the salaries paid to teachers were necessarily on a modest scale. Even the master of a large endowed school in the adjacent market town had to be content with £80 per annum, together with a small, inconvenient house attached to the school. My own remuneration amounted to no more than half that sum, and was by no means considered to be unduly small.

It is true that the cost of living generally was then low in village life, and many things now looked upon by all classes as necessities were then regarded more as luxuries, and therefore avoided. Still, for my part, I managed fairly well. I walked, where now one would ride; on two occasions my own steps took me to London. But I was looking out to better myself, and an opening occurring, accompanied by a considerable advance in salary, I bade farewell to my village school, and was in April, 1854, installed as second master at the Latymer Foundation School at Hammersmith, in the west of London.

At my new post at Hammersmith, I was able, without inconvenience to my work, to enjoy the advantage of living at my home, then at Wandsworth. These two places were about five miles apart; they were not situated in a direct line of communication, and there was no means of riding any part of the distance, so that it was necessary to walk the entire way. For the whole of the two years of my engagement I did this, and I was so fortunate in my arrangements that I never failed once in being at my post at the right time. I was excused from Sunday attendance for about half the period, and this I looked upon as a valuable concession on the part of the authorities of my school.

The winter of 1854-'55 was one of the coldest I remember; there was much frost and snow, and the journey then became rather tedious. The Thames was entirely blocked with ice and frozen over, and at Putney, where I daily crossed it by the old wooden bridge, now removed, I had the option, for some days, of crossing on the ice instead. Notwithstanding such occasional drawbacks, on account of weather, I found the long walk generally pleasant and enjoyable.

The school, dating from 1624, was founded and endowed with about 33 acres of land, situated principally in Hammersmith, by a Mr. Edward Latymer. The land was now built over, and the revenue derived from it had greatly increased since his time. And now,* I believe, a very large income is derived from it. The charity, in my time, educated and clothed 100 boys, and gave a gratuity and clothing to 45 old men. Only parishioners were eligible for benefit. The boys and men wore a uniform with a red cross on the arm. The boys also wore white neck-bands similar to those then worn by the clergy. The free education and clothing given enabled the school authorities to enforce strictly the rules for regular attendance, so that absences very rarely occurred. The boys bore a good character in the locality, and were well behaved and in good order in school. They supplied choirs for the three churches then in the parish. The headmaster, Mr. Richard Hester, an estimable man of the old school, most amiable, hard-working, and conscientious, had been trained at Westminster. He reflected, in his conduct of the school, the usual plan of management then followed in the elementary schools. Reading, writing, and arithmetic received the principal attention; Scripture, geography, history, and drawing also were carefully taught.

As to discipline, the rule of the school, as well as that of all I was brought into contact with, was that its enforcement should be based on fear. No such measures of encouragement or indirect means to the end as now exist were then in being. The cane was ever at hand, and the fidgety, the talkative, the irrepressible, as well as the luckless dunce, fared badly under this system. There were, indeed, no, or very few, severe floggings; but the cane, by a sort of automatic effect, followed on all delinquencies, and it seemed to be the most indispensable article of the school apparatus. This system of maintaining discipline, objectionable as most or all of us would now hold it to be, was

* I have just heard that the the endowment now provides two schools, one upper and a lower. The former is recognized as a secondary school, has 524 pupils and a large staff of university graduates as masters. The latter—the continuation of the original school—has more than 300 pupils; but the distinctive clothing is abolished.

not due to anything approaching, in intention, to cruelty or callousness, for it was administered by those who were, in all other relations, models of kindness and consideration. It was doubtless an adaptation of the old grammar-school method, which was so fully sanctioned and recognized that a large and important school in London had, and perhaps has now, as its arms, a preceptor holding a huge birch, with a little boy in front of him, probably about to incur its infliction.

My teaching in this school was nearly entirely confined to the first class, which occupied the board-room, used as a class-room. Here I had a pleasant time, with a class of about 15 of the most intelligent boys in the school. This work was fortunate enough to secure the approval of Her Majesty's inspector, who examined the school for the trustees.

During the time of my engagement, the parish authorities determined to prepare an account of the numerous charities of Hammersmith. An influential committee was formed, with the vicar, the Rev. F. T. Atwood, as chairman. My services were lent by the trustees of my school to the vicar as amanuensis, and a great part of the work, in its compilation, passed through my hands. I had access to all the old documents, church-wardens' accounts, gift-book, etc., of the parish, dating from the sixteenth century. They contained most interesting entries, of a historical nature, and shed light on the manners and business transactions of the times they related to. Having since developed an antiquarian taste, which I did not then possess, I have often regretted that I did not make some extracts from the records I had to examine. In attendance on the vicar and at the committees, I learned something of the way in which public business is conducted; and I had long and lonely tasks in the old church, often when the shadows had fallen.

At that time, too, there was a severe epidemic of cholera in London, and my work was often interrupted by funerals of the numerous victims. The old church, now replaced by a larger and finer, though, in my opinion, a less interesting building, was not, strictly speaking, ancient, its consecration having been one of the last public acts of Archbishop Laud. For what I did I had as a reward a warm expression of commendation from the chairman for "the great industry and intelligence displayed in assisting in the compilation of the work on the charities."

After this work was completed, I had another extraneous duty committed to me. The National School had lost its master, and the committee had been disappointed in getting a suitable successor. In the interim, successful application was made to the trustees of my school for my temporary services to carry it on. The late master, although trained at one of the best training colleges, and possessed of the government certificate, had not been successful in his conduct of the school, which had fallen into inefficiency and disorder. I had some rather uphill work here, but, at last, got order into the arrangements. I was offered the mastership, after having had temporary charge of it for several months, but did not accept it, as I thought it undesirable to change just then. The committee gave me a flattering letter of thanks for my services, in which it was stated that I had, during my temporary tenure of the office, succeeded in establishing order and efficiency in place of the lapse in these respects which the school had shown.

Had I accepted the mastership offered to me, I should have had to qualify myself by gaining the government certificate, as, unless the master possessed this, the school was not qualified to receive the government grant. I may say here that, as in our own work in England at the present time, this was one of the difficulties felt by teachers engaged in the schools, most of whom were uncertificated. As with our teachers now, so with those in the past, strong pressure was being used to bring them up to the standard represented by the possession of the certificate. But this was insisted on only in the case of the head teachers. And the position of our teachers now is harder than that of the older ones, inasmuch as they have special experience in a special work, and many of them have at great pains gained a special certificate testifying to their qualifications; but this is reckoned as of no value by the side of the academic, which bears no reference at all to their particular work. It was felt formerly that it was a great hardship to require of teachers, with their heavy school duties, that they should devote what should be leisure time to study, especially as many were at a time of life when study presents greater difficulties than it does in early life. And it often happened, at this time, that the experienced and efficient, but uncertificated, teacher was succeeded by one with little practical knowledge of the work, but fresh from the training college, with the required stamp, and the result was manifestly far from satisfactory. Such incidents did not tend to raise the estimation in which the measure was held by the great body of teachers. I suppose that in all such changes, necessary or not, some amount of hardship must attend them; but still, without sacrificing anything of efficiency, it is quite possible to avoid undue harshness in dealing with those who have carried on the work involved with success in the past, and it should be noted that all changes are not necessarily improvements.

One of the incidents connected with children, which has left a most pleasing impression on my memory, was my visit to St. Paul's Cathedral on the occasion of the Annual Festival of the Charity Children, then held there in June. Here, on a special series of platforms, tier upon tier, about 5,000 of the children of the city, in the uniform clothing of their respective schools, were gathered under the dome. At this time the quaint dress and the white bands of the boys had not been discarded, nor the white mob-caps and aprons of the girls. This large gathering in the vast cathedral presented a sight which to me was inexpressibly beautiful and touching, and when this concourse of fresh young voices joined, with an immense volume of sound and in perfect time and tune, in the hymns, and the choruses of the coronation anthem, and the hallelujah chorus, the effect to me was overwhelmingly grand. An Emperor of Russia, present at one of these festivals, is reported to have said that it was the finest spectacle he had ever beheld. I think it is very regrettable that this gathering is now discontinued.

One of my undertakings while at Hammersmith was the starting of a schoolmasters' association, of which I was chosen as honorary secretary. This was continued with some degree of success for a time, but did not survive my removal from the district.

An appointment being advertised, in a large boarding school for a superior class of children, connected with a charitable society, and which had a good reputation, the salary, too, being attractive, I thought it desirable to apply for it, with the view of bettering my position and

SCENE OF THE CHARITY FESTIVAL

The great interior of St. Paul's, which has held as many as 20,000 at one time

prospects. There were about 60 candidates for the post, and I thought myself fortunate in gaining it. I believed that a successful future was assured to me, and my ambition was to qualify myself, so that I might be able, with entire efficiency, to carry out my present duties, and any future ones which advancement might bring me.

I did not know, and was not informed that the school was not then in a good state of discipline, nor that this fact and the general unsatisfactory position of the instruction had become fully apparent to the governing body. There were then 155 boys in residence and two masters, of whom I was the junior. The latter had practically all the work, apart from the teaching to see to. The junior master's post had been vacant for some time before I entered on my duties. A spirit of insubordination in the school had arisen in consequence. Most of the boys, however, were nice and amiable, and I had a fair amount of success, eventually, with them. I had, as assistants, two boys—one of 15 years, the other of 14—both of whom had lately left school. They did their best, conscientiously and strenuously, but it could not be expected that their efforts would be sufficient for the requirements of the case. Not having authority to take decisive measures myself, and not being backed up by my immediate superiors, my work, other than the actual teaching, was carried on under great disadvantages. My hours of employment were continuous, from about 6.30 a. m. till about 8.30 p. m. My attendance was required at every meal, and the superintendence of all the work done by the boys fell to my share. The school hours, commencing at 7 a. m., had a duration of 8¼ hours per day, except on two days, when they were 5¼. I had no fixed weekly holiday, and, as a matter of fact, had one-half day in about three or four weeks. There was not much opportunity, under these circumstances, of adding to one's qualifications. I am afraid such conditions as the above were not unusual at this time in schools of the same kind.

The arrangements for teaching I found in existence were of the most primitive character. The school-room, which was detached from the main building, served also as the boys' living-room. It was divided into two parts by a curtain, and had the kind of old-fashioned wooden desks down the side in which the boys sat facing each other. The boys in school were divided mainly into four classes, each containing about 36 boys, who stood in two hollow squares in double rank; one of these was taken by the headmaster, the other by the assistant. The boys in each of the two divisions stood up together, and each division was practically taught as one class. They were supposed to learn Latin and French, as well as the ordinary subjects, but the progress made under these arrangements was not very great. The one point in which they excelled was in handwriting, to which much time was given. Nearly all the pens used were made of quills, and I had much practice in making and mending them. Eventually I was allowed to classify my division of the school in a way I considered to be more conducive to efficiency.

I need not say that under such conditions as are here indicated, in which, too, those who suffered most from the mismanagement were held to be to blame for the unavoidable shortcomings caused by it, there was not much comfort. I endeavored to get matters into an improved state, and, young and inexperienced as I was, to cope with such difficulties. I flatter myself that, in the results, I demonstrated the necessity of a radical change in the arrangements; and I believe the school since has risen to the highest rank in every way. After a year of hard work and apparently fruitless endeavor, I found it was impossible to continue in a post with duties so heavy. I therefore placed my resignation in the hands of the committee, who spoke and acted in reference to my resolve with kindness and consideration.

The closeness of occupation and the worry I had endured upset my health for a time, and on my recovery I endeavored to strike out a new line of occupation. An eligible opening was found for me in a life assurance office, but I happened to go away on a visit, and the letter announcing it was not delivered to me till too late, and the appointment was given to another. Then, after a course of unsuccessful applications in answer to advertisements, I directed my attention to my old calling. I applied for the second master's position in a large orphan asylum. Here I had an unexpected ordeal to face. In the presence of Her Majesty's inspector, the committee, and the whole school I was required to give a lesson to the first class of boys. The inspector, the Rev. J. D. Glennie, I knew at Hammersmith. I was not successful in gaining that particular post, but was offered that of third master, which, being inferior in point of salary to that I had formerly, I declined.

The inspector kindly sent me notice of the vacant mastership of St. George's, Camberwell National Schools, recommending me to the committee for it. I had an interview with them. The one who put the greatest number of questions to me, seeming to be the most prominent member, was the Rev. J. H. Watson, the vice-principal of the Asylum for the Deaf and Dumb, in the Old Kent Road. A day or two after I received a letter from him, stating that the committee had not elected me, but that there was a vacancy at the asylum for which he deemed me eligible, and inviting me to call on his father, Mr. T. J. Watson, the principal. I did so, and accepted the appointment then offered, and, on the 20th of August, 1857, commenced my work as a teacher of the deaf.

(To be continued)

HARRIET E. HAMILTON

A MEMOIR OF HARRIET E. HAMILTON

ALL pioneers in the teaching of speech to the deaf, all those who have seen it grow from an experiment to a triumphant science, felt that a red-lined chapter of its history was closed, on April 21, when Miss Harriet E. Hamilton died. Her unusually long and eminently successful career as a teacher of the deaf began more than forty years ago, in 1868, when she resigned from the Hartford (Conn.) public schools to enter the faculty of the School for the Deaf at Washington Heights, New York City.

Eight years she taught there, and became a thorough master of her work. Then the Western New York Institution for the Deaf was founded, at Rochester, and she answered a summons from it, though the infant school could pay her far less salary than she was receiving. She, the born teacher, did not meet this reduction with any spiritual decrease, but, instead, took further special training before going to Rochester. She took a course in phonetics under Dr. Alexander Graham Bell, inventor of the telephone and founder of the Volta Bureau, who stood with his great father, Prof. Alexander Melville Bell, as an authority on speech.

For twenty-seven years she taught at Rochester, recognized as a leader in the teaching of articulation and a pioneer in the science of phonetics and the psychology of speech. It is practical class-room work like hers, as much as laboratory investigation, which has given the triumph to the teaching of speech to the deaf.

Miss Hamilton's usefulness was by no means confined to the class-room. The speaking voice of hundreds of men and women is an echo of hers; but it is of a deeper importance that the speaking spirits of hundreds echo her bright and gracious manner, her scholarly view of life, her tender kindliness.

During her years at Rochester many positions of enlarged prominence were offered her, but she gently declined them all and continued diligently in her chosen work until, in 1903, she retired from active work as an educator. She remained in Rochester with Mrs. Edmund Lyon, a niece. Though ostensibly in retirement, her thoughts and activities were unceasingly occupied with the interests of the deaf and with the work of the church. From the inception of plans for the publication of THE VOLTA REVIEW she was a member of the advisory committee.

Miss Hamilton grew up in Hartford, Conn., where she graduated with the highest honors from the Hartford Female Seminary.

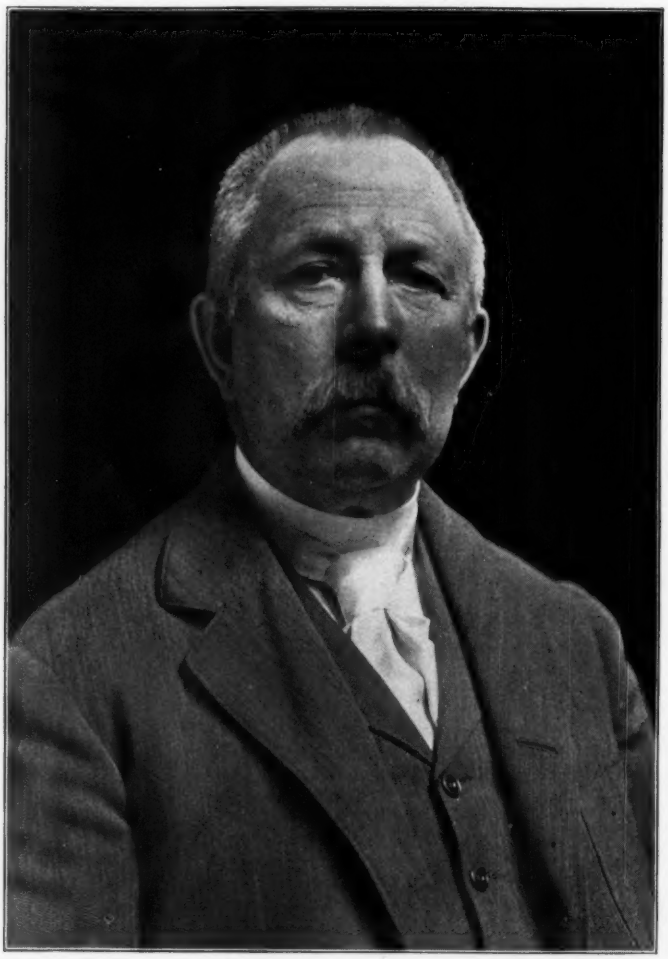
In 1865 she volunteered to go to the front as an army nurse. On reaching Washington she was denied that privilege by the authorities, who did not consider her strong enough physically. Undiscouraged, she forthwith enlisted as a teacher of the freedmen, and was so engaged in the District of Columbia for the next two years. During this time she met Major Charles W. Corey, a strikingly gallant officer, who was later, by act of Congress, awarded high honor for "meritorious service before Petersburg." Before she returned to Hartford, in 1867, they were engaged.

While at home she overheard her father saying to her mother that it would be utterly impossible for him to give Harriet such a dowry as had gone to her other sisters, in wealthier days. She determined to earn a suitable amount, and, without explaining her reason either to her parents or to Major Corey, secured an appointment as teacher in one of the Hartford public schools.

In the spring of 1868 she was summoned to Washington. It was a hasty summons and a sad one, for her sweetheart lay in his last illness, and, on the third day of April, the very day on which they were to have been married, she closed his eyes forever. Among her papers treasured all through her life was a leaf torn from a sister's diary, with this entry: "March 31, 1868: — This A. M., 8: 15, Major told Hattie he trusted in the Savior and could believe in all the precious promises of the Bible that his Mother had taught him. He said that his belief had grown gradually, also, that he should be with Sister, always."

In Memoriam

JACOB DE COU KIRKHUFF



"Mr. Kirkhuff was a man pure of heart, pure of thought, and pure of deed . . . a simple-minded, simple-hearted, brave, and true man. His labors of love and well-doing are ended, and now he is not, for God has taken him."—Dr. A. L. E. Crouter, Superintendent of the Pennsylvania Institution for the Deaf and Dumb, in which Mr. Kirkhuff was for 44 years an instructor.—This picture, here reproduced by courtesy of The Mount Airy World, is from a photograph taken by Conrad F. Haesseler, of Philadelphia, a member of the first oral class taught by Mr. Kirkhuff.

From The Silent Hoosier

DISCIPLINE

By the Late William H. DeMotte

The following article, prepared for the Silent Hoosier by Dr. William H. De Motte, just before his fatal illness, was found among his papers by Miss Amelia De Motte and handed to the editor. The tone of the article is wholly characteristic of the writer's spirit and reflects his practice in the school room:

Quietness and gentleness are forceful for discipline only as they suppress rather than arouse opposition. The opposite disposition inevitably predisposes your pupil to resist you. The gentle disposition accepts the pupil as willing to do right. The opposite places him at once as your enemy. Gentleness wins him and makes him ready to accept correction or penalty. Harshness makes him unwilling. "In my estimate Miss X. is the best disciplinarian in the bunch." "Disciplinarian—That's a large word and you are kind to attach it to Miss X. Of all, she needs it most. She is a good woman of course, but she always seems so quiet, so smiling, so gentle, that I had never thought of her as having any force. I should never think of her as a disciplinarian."

Now there crops out a fallacy too prevalent, the association of force, roughness, physical power as essential to discipline. This is not true; discipline cultivates force of character in the pupil and cannot be achieved without force of character in the teacher.

The inevitable must be back of all motion toward discipline. Whatever interferes to turn aside that, or to exempt the wrong-doer from his guilt is harmful—teaches him that he can transgress and yet escape. Whatever upholds the inevitable, making the wrong-doer responsible for his actions, is just, and cannot be omitted without injury.

At the same time justice should be tempered with mercy. Keep cool yourself and you will probably keep your pupil cool also and discipline will not be a harsh or even a disagreeable job, and so be all the more effective.

From the fact that gentle measures are most effective with children, one may not jump to the conclusion that gentleness unless backed up by firmness is worst of all dispositions. Gentleness comes in the approach to a boy, in the use of means to make him acquainted with his wrong-doing and the necessity of the penalty. Gentleness takes into consideration all the palliating circumstances and brings to bear the inevitable in the most effective manner. So that by the time the boy is called upon to meet the consequences, he is ready to admit his deserts and their justice.—[Silent Hoosier.]

BOOK REVIEWS

A New Light on Heinicke.

NEUE BEITRÄGE ZUR KENNTNIS SAMUEL HEINICKES. [New contributions to knowledge of Samuel Heinicke.] By George and Paul Schumann. Published by Ernst Wiegandt, Leipzig. 1909. 8vo., pp. 148.

(This work was published on the occasion of the Eighth Convention of German teachers of the Deaf, in Leipzig, October 3 to 6, 1909, and contains a portrait and facsimile of the handwriting of the subject. The book is divided into three parts. I. By George Schumann, Director of the Royal Institution for Deaf-Mutes at Leipzig, treats exhaustively of Heinicke as teacher in and director of that institution, founded by him in 1778, the first systematic and continuous account which has been attempted. II. By Dr. Paul Schumann, teacher in the same institution; deals with Heinicke as a publicist, mentioning not only his writings in connection with his life work, but those on other branches of pedagogics, polemics, and philosophy. His literary style and personal character are discussed at length. III. By Dr. Paul Schumann. A bibliography of works by Heinicke, and of those concerning him, with a list of portraits, statues, and other memorials.—A. C. L.)

The life and idiosyncrasies of the famous German, the founder of the first school for the deaf in Germany, and partly inventor of a special oral method of instruction, has been the object for the study of several previous authors, for instance, Newmann, Hill, and Walther, and others, but their biographies do not seem to have given a true picture of this strange and robust personality: fiction and reality have been interwoven.

The ministry of Saxony last year commissioned the two brothers, Director G. Schumann and Instructor Dr. Schumann, of the Leipzig institution, to elaborate a record of the life and work of Samuel Heinicke, the founder of the Leipzig institution, which, to begin with, had a connection with the university of that city. Previous to the appointment of Heinicke another man, Schulze, had attempted to start a small school for the deaf, and had gathered a few pupils.

The brothers Schumann have accomplished a minute research work of manuscripts, articles, etc., that might give a clue to a fuller and better comprehension of this interesting personality, and so far they have succeeded in their endeavors to reconstruct the true characteristics of Heinicke out of the dim and blurred, and in some respects, scarred traits others have given to posterity. The investigations of the brothers have resulted in the presentation of a reconstructed Heinicke, giving us a personality which seems much more sympathetic than that of old.

Director Karth, of Breslau, and Herr Neuert, of Gerlachsheim, give a review of the book in respectively "Blätter" and "Organ." Karth openly confesses that the image he hitherto had formed in his own mind of Heinicke has undergone a change through the reading of the new study, which rests on authentic sources of information. Being contemporaries, comparisons between de l'Epée and Heinicke have often been made, and it is irrefutable that sympathy has always rested on the side of the charitable and unselfish de l'Epée, whilst Heinicke was supposed to have talents of mercenary nature.

This theory cannot be maintained any longer. He was constantly annoyed by money matters, both when living in Eppendorf, near Hamburg, and when in Leipzig. He lived and died as a man not possessing any worldly means. He left a widow and children in poverty, the youngest son being only two years old at his death, which occurred in 1730.

It is not to be denied that Heinicke surrounded his method of instruction with secrecy and mysticism, and his arcanum of curative power to deafness has become famous, but on the other hand he attempted to generalize the work of giving the deaf of the country an education, and he proposed to the Prince of Saxony that an appropriation be made to support some students, or, as he puts it, "suitable subjects," in his school, whom he would undertake to train in one year, thus enabling them to teach the deaf children within their respective districts.

Besides being the practical teacher and educator, trying to blaze new trails, Heinicke was also a publicist of some range; some of his writings are of the greatest value, especially those dealing with the humble and miserable condition of the public schools of his time. They contain details of the culture of that period of high value. Heinicke was interested in all that aroused human interest in his time. For a time he published a monthly, "The Critic," and he wrote numerous articles and pamphlets on various topics. He had a great foible for the philosophic system of Kant. A. H.

THE SIGN LANGUAGE. A MANUAL OF SIGNS. Being a descriptive vocabulary of signs used by the deaf in the United States and Canada. By J. Schuyler Long, School for the Deaf, Council Bluffs, Iowa. Printed by Gibson Bros., Washington, D. C., 1910. 8vo, pp. 164. Price, $2.00 postpaid.

While this "Manual of Signs" is not by any means the first attempt to describe the sign-language of the deaf and to illustrate its various constituent signs by drawings or pictures, it is, without doubt, the most ambitious work of the kind ever undertaken and the most successful as well. The author of the book is himself deaf, and is a teacher of the deaf with large familiarity with the sign-language, acquired as a pupil in school, as a student at college, and finally as an instructor, making greater or less use of the language in his work.

The method of description or definition employed by the author makes the book a dictionary rather than a text-book, and it will be used therefore for the most part as a reference book and an authority by students of the language. The number of signs described probably reaches a thousand, more than half of them being given by photographic illustration. A complete index affords a means of turning to the description, and the illustration, if there be one, of the sign for any word desired.

Whatever service the book may render in the way of systematizing the sign-language and making it more uniform as practiced, there is little doubt that it will have effect as long as the sign-language may be used by the deaf in this country to hold signs to their present forms.—F. W. B.

ANNOUNCEMENT IS MADE THAT THE second volume of the Bulletin International de l'enseignement des Sourds-Muets will contain:

(1) A section on word-teaching to the deaf, handling this subject in the same thoroughgoing way as lip-reading was handled in the first volume. Considerations of theory or practice, which may be found in the manuals of instruction, will be omitted, the writers confining themselves to personal observations.

(2) Bibliographie rétrospective. Thomas Arnold et son œuvre.

(3) Bibliographie annuelle.

(4) Less faits de l'année. A brief account of the achievements, legislative, administrative, and pedagogic, accomplished in the year 1910, among all the nations to which the Bulletin penetrates.

(5) Les opinions de l'année.

The price of the second volume, like the first will be 5 francs per copy, to those subscribing at once. Subscriptions should be addressed to M. E. Boudin, 254 rue St. Jacques, Paris, France.

PREVENTABLE DISEASES. By Woods Hutchinson, A. M., M. D. Boston and New York: Houghton, Mifflin Company, The Riverside Press, 1909. Third Impression. 12mo, $1.50 net. Postage 13 cents.

Educators everywhere have become fully aware of the fact that their responsibility for the child's future does not end alone with his mental development, but also includes his physical well-being; to the end that the Roman's dictum *mens sana in corpore sano* may include not alone the aristocracy to whom that remark was originally directed, but the children of the people as well.

Such a book as Dr. Hutchinson's seems especially designed to fill the needs of a busy educator, whose time is too fully occupied with his professional duties to permit of his making any specialized investigation into the bodily ailments that are most likely to assail his charges. The volume is almost entirely concerned with discussions of the commoner diseases to many of which school children are peculiarly liable; such as colds, diphtheria, whooping-cough, malaria, headache, and "nerves." In addition the volume treats in a thoroughly satisfying way of scarlet fever and measles; ailments which, with spinal meningitis, are among the commonest causes of adventitious deafness. Educators of the deaf will also find the chapter on "Adenoids, or Mouth-Breathing; Their Cause and Their Consequences ,of peculiar interest. A partial list of other topics dealt with includes: "The Power of Heredity in the Prevention of Disease;" "The Physiognomy of Disease;;" "Tuberculosis;" "Pneumonia;" "The Natural History of Typhoid Fever;" "Diphtheria;" "Appendicitis;" "Malaria;" "Cancer," and "Mental Influence in Disease."

The volume is written in a clear and graphic style, and is readily comprehensible, even to those whose knowledge of medical terms is nought.—F. K. N.

KILMENY OF THE ORCHARD. By L. M. Montgomery, author of "Anne of Green Gables," "Anne of Avonlea," etc. With four illustrations in color, from paintings by George Gibbs. Boston: L. C. Page & Company, 1910. Small demi-8vo, pp. 256. Price, $1.25.

This is the love story of a girl who was dumb from birth, owing to prenatal influences. Whatever one may think of the phenomena incident to her dumbness, as viewed from the scientific standpoint, the story of how she loved and how she regained her hearing makes a charming little romance, told with all the grace which the author of the Anne books has shown in other works.—F. K. N.

FAMOUS POEMS EXPLAINED: Helps to Reading with the Understanding, with Biographical Notes of the Authors Represented. By Waitman Barbe, Litt. D., Associate Professor of the English Language and Literature, West Virginia University; with an introduction by Richard G. Boone, Ph. D., formerly Superintendent Cincinnati Public Schools, and President Michigan Normal College. New York: Hinds, Noble & Eldredge, 1909. Pp. 237. Cloth, 12mo, $1 postpaid.

Most collections of poems, however excellent, are like so many unset jewels—they have been ripped out of their context and brought to the attention of the inexpert public unaccompanied by any criterion of value or word of explanation. In so far as is practicable, "Famous Poems Explained" remedies this defect. The volume consists of about 65 well-selected poems, each one of which is prefaced with some account either of the origin of the poem or something informing by way of interpretation or appreciation; together with a running explanation of difficult passages or obscure

allusions. "Famous Poems Explained" should be very valuable as collateral reading outside the class room.—F. K. N.

LETTERS TO HIS HOLINESS POPE PIUS X. By a Modernist. Frontispiece, portrait of Pius X. Chicago: The Open Court Publishing Company, 1910. Pp. 300. Cloth, $1.25.

The author of this work is said to be a priest, "a devout Christian and a good Catholic in the broad sense of the word." To the lay reader, however, he appears to be a good deal more of a Unitarian. The book denies the divinity of Christ, casts doubt on the Virgin Birth and the Immaculate Conception, and in general is an excellent, brief restatement of the conclusions arrived at by means of the so-called "higher criticism."—F. K. N.

BY INHERITANCE. By Octave Thanet. With illustrations by Thomas Fogarty. Indianapolis: The Bobbs-Merrill Co., 1910. Pp. 394. Cloth, $1.50.

Another novel by the author of "The Man of the Hour" and "The Lion's Share." The story, which is treated with the author's accustomed certainty of touch and facility of style, deals with the negro question.—F. K. N.

BERRY'S WRITING BOOKS. Vv. 1-7. By J. H. Woodruff and H. W. Flickinger. Chicago: B. D. Berry & Co., 1910.

Of the authors of this work, Mr. Woodruff is supervisor of writing in the Indianapolis schools, and Mr. Flickinger is an expert penman of Philadelphia. The style of writing taught is the vertical system and the exercises are based on quotations from the children's classics. Book I is "The Jungle Book;" book II, "The Mother Goose Book;" book III, "The Bird and Beast Book," etc. Each volume is charmingly illustrated. The Berry writing books are used in the State School for the Deaf at Boulder, Mont., as well as in the public schools of other cities where there is a department for the deaf.—F. K. N.

EL ESPAÑOL POR MEDIO DE IMAGENES. [Spanish by means of pictures.] An adaptation of the French work by A. Boyer, of the National Institution for Deaf-Mutes at Paris. By Daniel Garcia, Director of the National School for Deaf-Mutes of Mexico, with a preface by D. Victor Collignon, Director of the National Inst. for Deaf-Mutes at Paris. 4to., pp. 100.

The new work follows closely on the lines of the original in French, which was fully reviewed in the ASSOCIATION REVIEW for April, 1905, p. 186. It is dedicated to Don Porfirio Diaz, "Restorer of the Public Peace," etc.—A. C. L.

MANUAL FOR CLASS IN PRINTING, used in the Pennsylvania Institution for the Deaf and Dumb, Mt. Airy, Philadelphia. By Arthur J. Godwin. 16mo., pp. 152.

This is one of a series of trades text-books published by the Mt. Airy School for use in its industrial department. With the author at the same time a master workman and a successful teacher, the book is a complete exposition and guide covering all departments and features of the art of printing, and at the same time a text-book especially written and arranged for reading and study by students of the art. The scheme of definitions of technical terms is particularly full and well adapted to serve its purpose of familiarizing deaf learners with the terminology of the trade.—F. W. B.

EJERCICIOS DE OBSERVATION Y DE LENGUAJE. [Exercises in Observation and Language.] An adaptation to the Spanish of the French work by A. Boyer and Jules Pautre. By Daniel Garcia. Mexico, 1909. 8vo., pp. 82.

This is a book of exercises, oral and written, to accompany the foregoing work. It is intended for use in the first year of the course in a school for the deaf, treating very simply of the different parts of speech, going on to orders, their execution and transmission, questions and answers, etc., and simple sentences founded on the subjects illustrated in "Spanish by means of Pictures." A second volume is promised.—A. C. L.

A FIRST READER FOR DEAF CHILDREN. Compiled and arranged for the National Association of Teachers of the Deaf. By the publications committee. Thomas Nelson and Sons, London and Edinburgh. 8vo., pp. 79. One shilling, net.

This is a well printed, beautifully illustrated work, covering in its vocabulary and sentence forms the usual primary language work of a school for the deaf. Dr. W. H. Addison, chairman of the publishing committee, says in his preface: "It is intended to supply a long-felt want—the need of a fully illustrated book of simple sentences such as the deaf child has to learn during his first years at school. It is in no wise designed to supplant the formal language lessons of the teacher—lessons which, to be of real benefit, must be given by a living personality following a definite method."—F. W. B.

"The Outlook for the Blind."

Though not connected with the peculiar work of the Volta Bureau, "The Outlook for the Blind," of Cambridge—Chas. F. F. Campbell, editor—has always many suggestions for the study of deafness.

In the current number, aside from the usual departments, etc., a long and unusually well-illustrated article called "Impressions of Institutions for the Blind in Germany and Austria," by Edward E. Allen, is presented. It is of especial interest in considering not only methods of instruction and institutional equipments abroad, but also the life of the students—the human side of the work. A new department has been started which deals with the personalities of educators of the blind, illustrated with excellent half-tones of the subjects.—S. L.

"Silent Echo's" Color Work.

"The Silent Echo," a paper published semi-monthly for the benefit of the pupils of the Manitoba Institution, of Winnipeg, has introduced color process work. Its issue for May 2 contained a charming little sketch, entitled "Making up," which was printed in three colors. So far as is known, this is the first instance of color process work in any periodical issued by a school for the deaf, in which the printing, the engraving, and the color work alike are done by the undergraduates.

THE READERS' FORUM

LIVE QUESTIONS DISCUSSED FROM EVERY VIEWPOINT BY THOSE MOST INTERESTED—ALL LETTERS MUST BE SIGNED

Work of the Census Committee.

TO THE EDITOR:

The unfortunate inclusion of the words "and dumb" in the law finally enacted governing the taking of the thirteenth census makes the enumeration secured as of the class "deaf and dumb" instead of "deaf." This is bound to render the enumeration defective in its omission of the many persons who, though deaf, are not in any sense dumb. It may be said that the committees acting for the American Association to Promote the Teaching of Speech to the Deaf, and the Convention of American Instructors of the Deaf, had secured an entirely satisfactory wording in the law as it first passed the two Houses of Congress. The veto of that law by President Roosevelt, however, made necessary a new enactment, and this going through without being subjected to the scrutiny of the joint committee or any of its members, gave us the unfortunate wording in the law as finally adopted. It is very probable that not a few of the class known as semi-mutes, as well as of the class of congenitally deaf, possessing acquired speech, will, through a literal and strict interpretation of the law and its accompanying instructions, be found to have been omitted from the enumeration.

But outside these omissions, the census will give information of the name, age, sex, color, and residence of every deaf person in the country. Already steps are being taken looking to the securing of a supplemental inquiry to be conducted by correspondence through the Census Department such as will give information of a detailed character relative to all deaf persons returned by the enumerators, similar to that obtained following the twelfth census, which inquiry it will be recalled was conducted under the supervision of Dr. Alexander Graham Bell as Special Agent of the Census. Representatives of the two committees, in the persons of Dr. Crouter, Dr. Bell, and Mr. Booth, of the Association; and Dr. Gallaudet, Dr. Fay and Mr. Jones, of the Convention, together with Mr. Bledsoe acting in the interest of the Instructors of the Blind, on April 29, met with Dr. E. Dana Durand, Director of the Census, and secured from him the assurance that the Census Department would undertake such a supplemental inquiry as may be in its matter and form agreed upon by the committee. The committee later took action in the appointment of a joint subcommittee, consisting of Dr. Fay, Mr. Booth, and Mr. Bledsoe, with authority to act for the committee in further consultations to be held with the Census Department.—F. W. BOOTH.

Mr. Roe's Position

TO THE EDITOR:

"Report after American Visit" (published August, 1909). Proportion of congenitally deaf pupils at the Bala Home.

It is surprising to find a letter on this matter "in your columns."

That such a palpably, though not willfully, incorrect figure should have been allowed to pass unchallenged from August, 1909 (when, in courtesy to those concerned, copies of the report were forwarded to American centers of instruction), to April 1910, is quite contrary to the desire of the visitor, who, notwithstanding the absence of any direct communication with the authrities of the Bala Home, tenders an expression of regret that he should have been led to believe that which was contrary to fact, thereby, possibly, causing inconvenience and doing injustice.

Perhaps the point that what appeared in THE ASSOCIATION REVIEW for December, 1909, was a verbatim copy made without any reference to the visitor, and was not "an article" from his pen, may make his position clearer and further explain the belated nature of this correction.

Faithfully yours,

FRED H. ROE.

The Mechanico-Syllabical Articulation Instruction.

TO THE EDITOR:

Dr. Paul, of St. Julien, near Metz, the author of several able and instructive articles, pamphlets, and books on articulation, has drawn my attention to the mentioning of a controversy of opinion between him and Prof. Stern in Stade, as given in some articles in "Blätter," dealing with mechanico-syllabical articulation instruction. The note referred to was printed in the December issue of THE REVIEW, and I feel certain it could never be taken but for what it was, viz., an impartial review in condensed form of an article from a fellow periodical, the name of which was quoted. I feel glad to assert my entire impartiality as to the differing views of the two gentlemen. In concluding, I wish to mention that Dr. Paul has in some subsequent articles in "Blätter" sought further to elucidate the matter in view. ANDERS HANSEN.

CONTEMPORARY FOREIGN THOUGHT

Edited by ANDERS HANSEN, Direktor, DEN KGL. DÖVSTUMMESKOLE, Nyborg, Denmark

OPINIONS OF LEADING SPECIALISTS ABROAD, AND RESULTS OF RECENT INVESTIGATION IN THE OLD WORLD

THE EVALUATION OF LABOR

Considerable attention is being paid by Continental educators to an interchange of opinion in the German press as to the place of manual labor in institutions for the deaf. This discussion had its rise from an article in "Blätter," written by Fräulein Börchardt, in which she urged a training in domestic science as one of the most valuable forms of preparation for practical life which the German institution could give its girl graduates.

Such training, according to Fr. Börchardt, cannot well be given at present as the facilities, in the great majority of institutions, are entirely inadequate. Even in the most complete and modern buildings now under erection, she finds that the architect seldom provides for a school kitchen, while it is not practicable to use the large kitchen, as the ranges and utensils have been built for the use of adults and so cannot be readily manipulated by children.

The boarding-out system (externate) is quite common among many of the German schools. But in only exceptional cases are the foster mothers capable of giving the deaf girls living with them a reasonable, orderly, and systematic training in cookery and housework. Neither do the boarding schools show any improvement in this respect over the externate system. In these institutions, a selected number of girls are generally set to work in the house or kitchen of the principal, or in the institutional kitchen, where they do the same work day after day, whilst the rest of the girls lead a pleasant sort of life, provided plentifully with food without needing to have to lift a finger in its preparation.

How Distaste for Housework Develops

This, of course, easily leads to a lack of interest in domestic work. Instead of soiling their hands by such rough work, the girls prefer sewing and embroidery and accordingly return home, upon the expiration of their school life, displaying both unfitness and dislike for useful and healthy housework.

Fräulein Börchardt quotes several selections from papers for the deaf, recommending that the education of the deaf be made more practical, and from these reflections of public opinion, as well as from her own observation, she concludes that not only must we educate in a higher degree our deaf pupils for work, but that the education must also provide them with knowledge and habits that ensure their progress in life.

These results, Fräulein Börchardt contends, may be attained by a thorough training in practical work, which the students can be readily brought to like if the subject of instruction can be brought into an organic connection with the world about them.

Manual and Cultural Education as Complements

Cultural education and training in domestic science can proceed hand in hand. Language work, arithmetic, book-keeping can all be introduced in connection with work in the kitchen; while natural science has its relation to the cultivation of our foodstuffs, to the nutritive value of meals, and to hygiene. The machines used in the culinary department introduce some elementary lessons in physics, as also do the phenomena of fire, gas, etc. The composition of meals teaches chemistry, and a reference to the origin of spices, pepper, and other exotic ingredients entering into the composition of our food would furnish the text for some interesting lessons in geography. Handiwork and housework, moreover, are complementary; the boys can make many of the wooden utensils and appliances used about the kitchen, while the girls can work upon the towels, dish-cloths, etc.

The great value of domestic science, according to Fr. Börchardt, lies in the unconscious acquisition by the learner of habits which must make for success in life: habits such as punctuality, neatness, economy, politeness, and willingness to assist others. Above all, if properly directed, the child will come to have a love for work itself. A knowledge of domestic science, Fr. Börchardt points out, will also tend to establish a common bond of interest, through likeness of pursuits, between the humble little cottages from which most deaf children come and the great institutions to which they go.

By inculcating an interest in housework, many more deaf girls would probably go in for the healthful occupation of domestic service, where, despite the handicap of deafness, the large demand for good servants would ensure them constant employment.

Education in domestic science has also the broader mission of preparing girls for their matrimonial duties. With a practical knowledge of marketing, cookery, and general housework, the girl will better know how to make both ends meet, how to make the most of a

small income, and how to make the home so comfortable and attractive that the husband will not be desirous of outside diversion.

There remains the question of fitting such a course as this into the curriculum. The German school day is already so crowded (the larger girls having no less than 36 hours of prescribed work a week) that no additional work can be superposed. It would, however, be possible to clip four hours a week from other subjects; and this reduction in favor of domestic science, Fr. Börchardt thinks, will surely pay.

The remainder of Fr. Börchardt's paper deals with the practical working out of her proposal. The course should extend, she thinks, over two years. A special kitchen must be put in, the cost of which will be about 2,000 marks ($500), according to her calculations, while the running expenses to food and fuel will amount to 6 or 8 marks per pupil for the school year of 40 weeks.

In the issue of "Blätter" succeeding the publication of Fr. Börchardt's article, there appeared a commentary upon her conclusions, written by Director Zimmerer, of the Nuremberg Institution. Director Zimmerer disputes Fr. Börchardt's contention that girls living in boarding schools show a tendency to estrangement from domestic work, and as an illustration he outlines the methods adopted in his school to accustom them to manual labor.

Though his institution has no particular kitchen for instruction in cooking, he believes the pupils derive a fair measure of benefit from the cooking exercises. Three years ago the Nuremberg authorities started cooking classes. The girls of the oldest class were required to be present in the kitchen three times weekly from 10 to 12 in the morning to assist in the preparation of dinner, under the direction of the matron, whose earlier experience as a teacher in a domestic science school for adults had rendered her well versed in this sort of instruction.

Director Zimmerer, however, was not fully content with the results, and this work was discontinued and remodeled. Funds were granted him with which to establish an extension course for girls, with the result that besides the ordinary eight-year course of school education a ninth year, for girls exclusively, was added in the fall of 1909.

As the curriculum shows, the course is mainly intended to make for the efficiency of the girls in practical life. Twenty hours weekly are spent in sewing and dressmaking, twelve hours in cooking, and only six hours are set aside for ordinary school training. One day fortnightly is devoted to ironing. It is regrettable that the training in laundry work cannot be fittingly carried out, owing to the fact that the machines are of the modern type, run by electricity, and instruction by means of them is consequently inapplicable to small households. Director Zimmerer believes this additional course for girls to be unique.

As to the objections of Fräulein Börchardt that the internate system endangered the practical education of deaf girls, Herr Zimmerer disagrees entirely and submits in rebuttal a detailed list of work and duties the boarders have to attend to at the Nuremberg institution. Here the boys are required to make their beds and assist the little ones; to sweep some parts of the institution; to keep the play grounds in neat order; to clear them from snow; and, under the direction of the janitor, to do all the gardening, dig the soil, weed it, sow and plant the vegetables, harvest them, and store them for winter use, as well as to wheel-barrow twenty-five cart-loads of manure to the garden grounds and turn over the soil for the winter rest. Of the vegetables consumed by 130 persons in the institution, two-thirds are raised as a result of the boys' unassisted exertions. The boys also have to shine ninety pairs of shoes every morning, and on Monday morning double this number.

The girls, like the boys, do their own beds and assist the little ones in doing their hair and making their beds and in dressing. They are also required to lend a helping hand in the cleaning of the dormitories, and by turn they serve at the distribution of cups and saucers for breakfast, and likewise by turn they assist in the kitchen and in the dining-room. All Saturday nights from 4 to 7 they polish dishes and utensils and brass-work. They have also to attend to their dresses.

It will appear that there is some reason for Director Zimmerer to say that anything exceeding these requirements for training in practical work is an evil. The blessed age of childhood occurs only once. Children must be allowed time for playing and romping about. Life's tread-mill grind soon begins; and school life should not only prepare them for this; it should also provide them with memories of a time which possibly may be the one spot of sunshine in later bleak and cheerless periods of life.

Literature—I. *Luneburg:* Methodik des hauswirtschaftlichen Unterrichtes; Teubner, Leipzig; 1 mark. II. *Luneburg:* Hauswirtschaftslehre: Teubner, Leipzig; 4 marks. III. *Springer:* Haushaltungsunterricht; Teubner, Leipzig; 5.80 marks.—A. H.

THE GERMAN NATIONAL CONFERENCE

At the eighth national conference of German teachers of the deaf, held in Leipzic, Herr Weise, of Berlin, reported that since the last previous conference in 1906, the executive committee had obtained the passage of an act providing for the compulsory education of the deaf in Prussia.

Instructor Kische, of Breslau, read an important paper dealing with the much-mooted question of the backward deaf. Herr Kische placed before himself these questions: Does experience hitherto gained indicate that a cer-

tain percentage of teachable deaf should be excluded from oral training? If so, then through what medium must these non-speakers be educated?

While Herr Kische did not aim at attacking the principle of the oral method, he contended that it would be a wise policy to exempt a certain percentage of deaf pupils from oral instruction because of bodily or mental incapacity. To this class, Herr Kische asserted, oralism was almost profitless in adult life, and its acquisition a too onerous task. He thought it of higher value to the pupil to acquire the fullest possible command of the word language in connection with the widest range of general knowledge, and to enable such deaf to communicate swiftly with the hearing through writing, and to give them such a standing in language that they, with profit, can read and thus extend their narrow limits of knowledge acquired at school.

Signs as an Explanatory Aid.

In the second half of his address Herr Kische dealt with the means of instruction through which that section of the deaf pupils had to be educated when discarded from the ordinary oral classes in order to obtain an extensive use of the written form of the word language. It is manifest that such aim can only be attained by adopting a medium that represents the word. The sign language presented itself as the easiest means through which to inculcate a general but limited education to the deaf child, and as a valuable means to influence the minds of this category of pupils, but being both of formal and syntactic incongruity with our word language, it can only be admitted as an explanatory aid in the instruction. Only to employ the written word in the class would be a too slow, wearisome, and formal proceeding, and besides, it would not suffice to appeal to the heart and the feeling of backward pupils. The only method that remained was the combination of the manual alphabet and writing. The speaker explained the advantages which this method involved, and he mentioned the thoroughly satisfactory attainments which were secured through this method where applied as in Sweden, Denmark (where Herr Kische has studied the results in the Copenhagen institutions), and in America. The idea is more easily imparted, perceived and reproduced through the finger alphabet than through the word of mouth.

After a short stage for training exercises, a language-object instruction can be commenced. The mental power of the child is less absorbed in the external garment of the word, consequently more energy is left for observation, penetration, and interest in the pure act of thinking.

The reading of this important paper was followed by a very long and animated discussion, at the end of which this resolution was carried unanimously: "The conference agrees with the speaker that there are deaf pupils, although of restricted number, who do not succeed in acquiring through the pure oral method a knowledge of the word language that suffices for life. It is desirable through experimentation to try to find ways that with efficiency prepare these deaf pupils for life."

Curriculum for the Deaf.

Director Nordmann, of Bromberg, introduced the second main topic for consideration of the conference at Leipzig: "Outline of a Curriculum for the Institutions for the Deaf." In referring to the past, he recalled the futile attempts of bygone days to train the ordinary school teacher in the special pedagogy of the deaf, in order to make the co-education of deaf and hearing possible, a theory that proved to be quite erroneous.

Educators of the deaf also made a serious mistake, according to Director Nordmann, when they tried to imitate the curriculum of the schools for hearing. The public school for hearing was overburdened with material which quite surpassed the capacities of the average deaf, who, besides being taught this amount of facts, had also to acquire understanding of a language. The acquisition of language remains the main purpose of the education of the deaf. The pupil must become imbued with a liking for reading through well-adapted material. The so-called "school language" is too artificial; it needs to be made more simple; the pupils, in most cases being children of plain people that use plain linguistic expressions, must be acquainted with idioms; this class of people used only some hundreds of words in their daily intercourse, and the deaf child must be trained in a liberal and fluent use of such language, as well as becoming clever lip-readers of these idioms. There was so much to comply with in the training of the deaf that it was quite justifiable that the school should claim a ninth year added to the present eight-year term of instruction. This paper, too, was followed by a lengthy debate, but no resolutions were passed.

The proceedings of the conference have been published oin an illustrated octavo volume of 228 pages.—A. H.

THE RHINE CONFERENCE.

Training for Life.

At the Rhine Conference, Herr Genrich, of Essen, read a paper on: What provision has to be made better to prepare the deaf for the struggle of bread winning, and morally to protect them? This paper was subdivided into thirteen theses:

1. The demand for a more thorough preparation increases continually in every trade.

2. We cannot but acknowledge that the preparation we give the deaf to compete with the hearing in industrial trades is but modest.

3. The deaf themselves are aware of this shortcoming. The regularly repeated resolutions at almost every large or small convention of the deaf in favor of a higher education for the deaf, give evidence of the seriousness of their situation.

4. It is the duty of the educators to find ways and means to improve the position of the deaf in society.

5. The compulsory term of eight years' school attendance must be extended to at least ten years.

6. It would be of invaluable advantage to create a bond of relation between the schools for the deaf and the seminaries (the normal training schools), and thus make the future teacher acquainted with the deaf, to enable him to become a good adviser and friend of the adult deaf settled within his school district.

7. Supplementary and compulsory courses of instruction for the deaf are to be provided for in all cities and towns where a certain number of deaf reside.

8. Provision must be made to admit the deaf scattered over a large country area to join an annual course of instruction of 3 to 4 weeks' length during the years of apprenticeship.

9. Provision for special religious service is an unavoidable necessity.

10. Unions for the deaf on a non-sectarian religious basis are to be formed and, eventually, to be directed. Division of the deaf after denominational lines is an evil.

11. The deaf himself is the poorest guide for his fellow sufferers; but circumstances make it a duty for the teachers to undertake the guidance of their associations.

12. Benevolent associations for the purpose of raising money in aid for the deaf are more harmful than useful.

13. The climax of assistance and care for the deaf is the homes for aged and infirm, connected with training courses in housekeeping and domestic science.

The executive committee of the branch was invited by the conference to influence the authorities to make provision and arouse interest for a collaboration between the school for deaf and seminaries (normal training schools) in accordance with thesis 6 of the above paper.—[Organ.] A. H.

How Prussia Trains Her Teachers of the Deaf.

Blätter gives the regulations for admission and attendance at the training course for students at the Royal Institution for the Deaf, Berlin, as they have been recently revised by the Prussian Ministry of Public Instruction and issued under date of March 10, 1910.

According to the new regulations, the training course commences annually at the beginning of the summer semester at the Royal Institution for the Deaf, in Berlin, for teachers desirous to prepare themselves for the education of the deaf. Qualified applicants are teachers of the public schools in possession of the certificate of the second degree (which examination is passed after having taught in a school for a couple of years), teachers of the higher schools (gymnasiums), theological candidates, and clergymen. Female teachers have to prove that they really have taught as class teachers for at least two years. All applications must be accompanied with a medical doctor's certificate of good health.

The training course lasts for two years, and the term can be shortened only through special permission of the ministry.

The participants are trained practically and theoretically. The theoretical preparation includes an extensive course in pedagogy, the methodic instruction of the deaf, mainly the teaching of speech, knowledge of the anatomy and physiology of the speech tools, the laws of phonetics, the development of infant speech, the logical and grammatical construction of the word-language, the commonest speech deficiencies, a thorough familiarity with the mental and linguistic development of the deaf child—also including sign language—knowledge of the history and the literature pertaining to the education of the deaf, as far as it might be of importance for its further development.

The theoretical instruction is given by the director, assisted by some of the instructors and professors from the Berlin University.

The practical side of the training is obtained through presence at the instruction in the several classes led by the ordinary teachers, and through exercises and personal work in classes of the school.

The students have especially to extend their knowledge of foreign languages, and must further study the newest movements of modern pedagogy. A library is at hand in the institution.

The students have occasionally to compose written reports of features from the instruction, under the direction of the principal, or other written exercises.

The "partakers" have to assist in the supervision of the pupils, if necessary, also during vacation, and to help the children with their work outside the class. They are recommended to communicate with the deaf everywhere to the furtherance of speech growth. They are not allowed to use conventional or artificial signs in their intercourse with the deaf, and they must not permit the pupils to use similar signs when they have learned oral expressions for the idea which it is desired to express.

The director can require the students in couples to supervise the pupils on Sunday morning and on week days between supper time and bed time, and, if he so wishes, they must sleep in the dormitories with the pupils. The director decides the length of such supervision work, and he may exempt married "partakers" from these duties altogether.

If a student does not show sufficient fitness for the career his state support may be withdrawn.—A. H.

NEWS AND COMMENT

HAPPENINGS OF GENERAL AND TECHNICAL INTEREST—HOW THEY APPEAR TO THE LAY AND PROFESSIONAL PRESS—ITEMS FROM OUR READERS SOLICITED

Dr. Bell's World-Tour.

Dr. Alexander Graham Bell left Washington on May 9, for a trip round the world, which, it is anticipated, may take a year. Dr. Bell was accompanied by Mrs. Bell; by F. W. Baldwin, consulting engineer of his laboratory at Breinn Breagh, near Braddeck, N. S.; and by Mrs. Baldwin. The party sailed from Vancouver on May 20th for the British possessions in the South Seas. After visiting the Fiji Islands, Australia, New Zealand, and Tasmania, the party will travel up the Chinese seaboard to Peking, and thence will go to Europe, either by way of the Trans-Siberian Railroad or by the southerly route via the Indian Ocean. The trip will include visits to all or nearly all the capitals of Europe. Dr. Bell, it is understood, has letters of introduction from the Secretary of the Smithsonian Institution, from the State Department by direction of the President, and from James Bryce, the British Ambassador, as well as from many other personages.

Call from Dr. Walker.

Dr. N. F. Walker, superintendent of the South Carolina School for the Deaf, has returned from a tour of inspection of schools on the Atlantic seaboard, extending as far north as the Mt. Airy school. It is understood that a main object of Dr. Walker's trip was the collation of data bearing upon a project to promote the physical betterment of his pupils by out-of-door exercise. While on his trip, Dr. Walker stopped at Washington, where he visited the Volta Bureau and Gallaudet College.

The Tenth Conference of Superintendents and Principals of American Schools for the Deaf, which the Executive Committee of that organization had considered holding this summer, has been postponed, and considerations of the time and conditions of the next meeting taken under advisement until January, 1911.

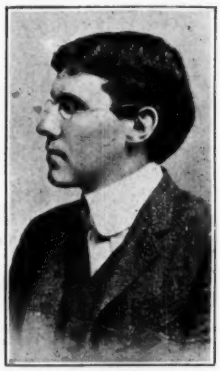
Walter C. Rockwell, a student in Gallaudet College, has been presented with a gold medal for his rescue of a fellow student, Miss Maud Edington, from drowning in a whirlpool of the Potomac River, some 15 miles above Washington. The medal was the gift of Miss Edington's family.

The second biennial convention of the North Carolina Association of the Deaf will be held at Durham, August 25, 26, and 27. Robert S. Taylor, of Mt. Olive, N. C., is secretary.

More Speech-Teaching in Romney School.

R. Cary Montague, the new superintendent of the West Virginia Schools for the Deaf and Blind, has announced his intention to further speech-teaching wherever possible among the deaf pupils of his school. Mr. Montague writes in "The West Virginia Tablet," the weekly paper issued by the school, as follows:

"Now, as to methods, I have heretofore refrained from writing anything on this subject



R. CARY MONTAGUE

because I did not feel competent to discuss it, but I have now reached some conclusions that are worth expressing.

"In the deaf department the teaching of speech and lip reading has been most lamentably neglected, and it is a pitiful fact that some children have lost rather than gained in the use of spoken language during their stay in this school. By another year I intend to have at least three additional well-trained oral teachers, if it is possible to do so, even if it shall be necessary to make changes in the present staff of teachers to secure them, and to increase this number as rapidly as is practicable; but it is not my present intention to abandon the sign language nor the manual alphabet for the instruction of some classes, who, after a fair trial, seem to be incapable of learning speech.

"I consider it our duty to teach a child to talk even if it can do no more than make its parents and friends understand it. I feel sure that in my efforts to establish the oral system here, so far as is practicable, I shall have the earnest support of the pupils' parents."

The accompanying picture of Mr. Montague is here reproduced by courtesy of "The Outlook for the Blind."

Oregon School's New Home.

Work of construction on the new home of the Oregon School for the Deaf, at Salem, Ore., has been completed, and by a vote of the school board of trustees removal into the new quarters will be made at the close of the present school year, in June.

The school's new plant is said to be as complete as experience can make it. Immediately after Superintendent E. S. Tillinghast had been notified that the State Legislature had passed an appropriation of $75,000 for the school, he entered into a correspondence with all the superintendents of American schools for the deaf for the purpose of ascertaining the consensus as to the requisite type of building.

The accompanying picture, taken when the main building was practically completed, and here reproduced by courtesy of "The Oregon Outlook," thus shows the type of structure which most educators of the deaf deem best adapted for its purpose, subject, of course, to the limitations imposed by the amount of funds in hand.

This central administration building is constructed of white brick, with a frontage of 174 feet and a depth of 105 feet.

A central steam heating plant, with the boiler house 220 feet from the nearest building, has been so located that when desired the condensation may be returned to the boiler by force of gravity.

"By this arrangement," says "The Salem Statesman," "and by the separate unit or modified cottage system of building, the possibility of the entire destruction of the institution by fire is eliminated. All buildings are limited to two stories and a high basement, and the main building has four interior and two rear porch exterior stairways, providing ample means of exit in case of fire.

"Ventilation of dormitories is obtained by air shafts containing steam coils. No dormitory will contain more than ten pupils. All the working departments and private bed-rooms will be connected with the office by a fire alarm and a telephone system."

The school is located just outside North Salem, on perfectly drained, fertile grounds comprising 52 acres.

Among the revisions in administration inaugurated by Superintendent Tillinghast it is noted that "the proportion of trained oral teachers has been increased, and both the amount of time given to specific instruction in speech and speech-reading and the use of speech in general instruction has been materially increased."

Oklahoma School Site.

The new buildings for the Oklahoma State School for the Deaf, for which the legislature of that State has just appropriated $100,000, will be situated at Sulphur, Okla., on a site bounded on two sides by the Platt National Park. Sixty acres of land have been ceded by the citizens of Sulphur, and an option has been obtained on 40 more. The site for the school is somewhat rough, but according to the "Deaf Oklahoman," is one of great natural beauty, being quite close to the famous Antelope and Buffalo Springs, and within a short distance of the famous Little Niagara Waterfall.

It is understood that the school will be built on the cottage or building-unit plan, as is the Oregon School. Superintendent A. A. Stewart is now making a tour of other schools for the deaf throughout the country, with a view to learning the best building methods.

N. A. D. Convention.

The program of the Ninth Convention of the National Association of the Deaf, which is to be held at Colorado Springs, Col., from August 8 to August 13, includes:

August 8. Morning. Formal opening of the Convention, with an address of welcome by Gov. John Franklin Shafroth. Afternoon. Meeting of the Gallaudet College Alumni Association.

August 9. All-day outing. Evening. A moving-picture entertainment and meeting of secret orders.

August 10. Business session. Evening. Grand ball.

August 11. All-day outing. Evening. Banquet.

August 12 and 13. Business sessions.

This program, it is announced, is subject to change.

In connection with the Convention, Prof. Warren Robinson is arranging an exhibition of the handiwork of the American deaf, which is to include articles made by hand, such as cabinet work, needle work, leather work, etc.; inventions, art, printing, and testimonials. Exhibitors are requested to address Dr. Robinson at Delavan, Wis. It is the intention to retain this exhibition in permanent shape.

A Help for the Hard of Hearing.

During two winters in New York City I was able to attend and thoroughly enjoy several series of very interesting illustrated lectures by accidentally discovering something for myself. In the lecture-hall of the Museum of Natural History, which is said to seat two thousand, and where a trumpet would probably have been of no use to me, I found that by slipping down in my seat, after the lights were lowered, until my head rested against the back of my seat, I heard distinctly wherever I sat if the lecturer raised his voice, as most of them do. I was sometimes startled, when shifting to another position, to realize the absolute silence which followed, as my head left the chair-back. I once heard an entire lecture by resting my head against a column by my seat ,and I have often laid my chin upon the back of the chair in front of me when it was high enough for me to do so. Even resting the elbows on the arms of the seat and the chin upon the hands will be found a help. Of course, this is easily explained by the vibration, and an uncarpeted hall will be better than a carpeted one.

—["Woman's Home Companion" for April.]

THE INSTITUTION PRESS

Oral Work in England.

The Oklahoman, which, by the way, does not lean very strongly toward oralism, copies in its issue for March 5 part of a report written by a deaf visitor to one of the English oral schools, and printed in the Birmingham Silent World. Following is the passage as taken from the Oklahoman:

"Prior to the occasion of this visit all my acquaintance with deaf people had left a rooted impression upon my mind that the oral system of teaching was inferior to the sign language; and as Mr. Greenslade took me into class-room after class-room, we started a lively argument upon the point, at the end of which I had to confess myself completely routed and converted to a belief in the merits of 'lip-reading.' For I had ocular demonstration of the wonderfully quick manner in which these children had been taught to read spoken words. Going up to one small boy for example, Mr. Greenslade would, without any facial contortion or grimace, say to him, as simply as he could speak it: 'This gentleman is Mr. Wilson from London;' the boy would then take a piece of chalk and instantly write on the slate the words: 'This gentleman is Mr. Wilson from London.' The headmaster would then call another boy and say to him: 'Mr. Wilson has come from London in his motor car,' and the boy would similarly write the words upon the slate unhesitatingly. I could have the more readily conceived such a performance to be possible had the sentences spoken been of an ordinary 'Mary had a little lamb,' or 'Baa, baa, black sheep, have you any wool?' style; but that these children should read such words as 'Wilson' and 'motor car' so unhesitatingly thoroughly amazed me."—[The Lone Star.]

Indiana has already spent a million dollars on the new buildings for the "School for the Deaf," and they are not completed yet.—[The Washingtonian.]

The Iowa Association for the Advancement of the Deaf will meet at Council Bluffs, August 2-4, inclusive.

SUGGESTIONS TO TEACHERS

Shortened Writing

When teaching in the lower grades, Instructor Lorenz Cassimir, of Wuertemburg, Germany, uses a time-saving device for the copying of texts from the blackboard, by training his pupils in an abbreviated orthography.

In the case of the more difficult elements of a sentence where grammatical stumbling-blocks may be present, he writes the word in full, or at least so that mistakes are prevented. He adds some examples which here are translated into English, and which will give an idea of his method. In a description of a visit the class had made to a potato field, the omissions of letters and syllables appear in this way: "We h. gone t. a potat. f. It i. n. f. off. The f. i. lyi. n. t. the inst. It i. larg." Herr Cassimir allows also pupils the use of this particular writing for reproductions and themes. Herr Cassimir believes that this method contains some advantages in regard to training in lip-reading, as the process of reading such a text consists in the filling out of what has been indicated by only a fraction of what really is the story when written in full orthography.

This system of abbreviated orthography, moreover, not only trains the student in lip-reading by developing his powers of inference, but also results in allowing more time for actual practice of the art, by reason of the fact that the time consumed in the purely manual labor of copying has been materially shortened.—A. H.

A Picture Library.

The Wisconsin School for the Deaf has what may be called a pictorial library—a collection of pictures for the illustration of schoolroom work. These have all been carefully classified and catalogued, so that any one of the several thousand pictures can be obtained as easily as a book from a well-conducted public library.

Such a collection as this should be of very great assistance in class-room work. Scarcely a day passes in any class in which the teacher does not find himself at a loss to make the pupils understand the meaning of some word or term in plant or animal life, or in the process of manufacture.

It would, for instance, be quite impossible to give by explanation any clear conception of the difference between cotton and linen cloth. But if the teacher could show the class pictures—or, better still, actual specimens—of cotton and flax plants, and of the different stages in the manufacture of the fiber, every difficulty would be at once removed.

No doubt every school has a considerable quantity of good illustrative material lying around in one place and another, but which is often of very little service because of the difficulty of finding quickly and easily just what is wanted for the occasion.—[Canadian Mute.]

FOREIGN NEWS NOTES

By Prof. ANDERS HANSEN, Nyborg, Denmark.

Hygiene in Articulation Instruction.

At the conference of the Austrian teachers of the deaf in 1905, Herr K. Baldrian read a paper on the above topic, contending: "The danger of transferring germs lies in the production of such sounds where an explosion of the air current takes place when touching the vibrating obstacle of some part of the speech organs which causes the production of fine spittle particles. At the conclusion of all such exercises a thorough washing should never be omitted." Since then a teacher at the Prague institution has worked at the problem of bringing an improved hygiene into the instruction of articulation. To this end he has constructed a table, on the surface of which a vertical glass pane has been fixed. The teacher and pupil are placed at the opposite sides of the table, and the pane thus prevents spittle particles being carried by the air current between teacher and taught. An illustration and description of the table appeared in a recent issue of the Blätter für Taubstummenbildung.—A. H.

An Interesting Old Book.

While Professor Rueshert, of the Berlin Institution, was making preparatory studies for his work on the sign-language, he discovered a hitherto unknown dictionary of conventional signs. Although the work was found in the library of the Hungarian Institution for the Deaf, at Waitzen, the text was in German. It must have seemed to be of value in its time, for four handwritten copies of it have likewise been discovered. Before the national awakening of Hungary, the instruction of the deaf in that country was carried on in the German language, and this circumstance explains the reason for the German text. This discovery of Professor Rueshert's brings to light the only extant sign-dictionary in German.

More German Instructors of the Deaf.

Seven candidates out of nine passed the prescribed examination for teachers of the deaf in the month of March, after having studied for two years at the Royal Institution for the Deaf at Berlin. Only one of the candidates who passed was a woman.

A New Home for the Deaf.

A wealthy mine-owner of Saxony has donated 20,000 marks to the Saxon Union of the Deaf for the erection of a home for aged and infirm deaf of that province in commemoration of a deceased brother.

THE UNIVERSAL ALPHABETICS

CONDUCTED BY M. GARDINER

MONTHLY LESSONS IN MELVILLE BELL SPEECH SYMBOLS, THE MASTERY OF WHICH ENABLES THE STUDENT CORRECTLY TO PRONOUNCE ANY SOUND IN HUMAN SPEECH

KEY TO THE MELVILLE BELL SYMBOLS.

CONSONANTS.

p	as	in	pʃ	pay	ʃp	ape	pɪp	pip
t	as	in	tʃ	tay	ʃt	eight	tɪt	tit
k	as	in	kʃ	K	ʃk	ache	kɪk	kick
b	as	in	bɟɨ	beau	kɟb	cob	bɪb	bib
d	as	in	dɟɨ	dough	kɟd	cod	dɪd	did
g	as	in	gɟɨ	go	kɟg	cog	gɪg	gig
m	as	in	mɹn	tum	dɹm	dumb	mɪm	mum
n	as	in	nɹn	ton	dɹn	done	nʌn	none
ŋ	as	in	nɹŋ	tongue	dɹŋ	dung	sʌŋ	sung
h	as	in	hʃ	hay	hɹ	high	hwɪm	whom
ʍ	as	in	ʍʃ	whey	ʍɹ	why	ʍɟt	what
w	as	in	wʃ	weigh	wɹ	Y	wɪn	one
f	as	in	fɹ	fie	ɟf	off	wɹf	laugh
v	as	in	vɹ	vie	ɟv	of	wɹv	love
θ	as	in	θɹ	thigh	tɪθ	teeth	ɪθɹ	ether
ð	as	in	ðɹ	thy	tɪð	teethe	ɪðɹ	either
s	as	in	sʃ	see	ɪs	ass	bɛts	bets
z	as	in	zʃ	Zee	ɪz	as	bɛdz	beds
ʃ	as	in	ʃʃ	she	ɪʃ	ash	ɪtʃ	etch
ʒ	as	in	ʒɨʒ	rouge	dʒɨ	Jew	ɪdʒ	edge
ɲ	as	in	ɲɨ	hue	jɲɨ	few	kɲɨ	Q
j	as	in	jɨ	you	jjɨ	view	bjɨ	mew
ɹ	as	in	kɹɨ	crew	tɹɨ	true	tɹɹ	try
ɰ	as	in	gɰɨ	grew	dɰɨ	drew	dɰɹ	dry
l	as	in	klɨ	clue	klɹd	clean	plɨm	plume
ɫ	as	in	glɨ	glue	glɹd	glean	blɨm	bloom

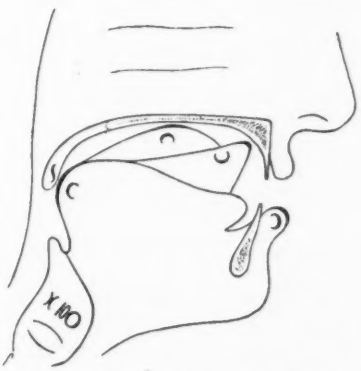
Vowels.

ɾ	as	in	ɘɾɔ	beat	ɑɾ	quay	ɒɾɑ	pique
ɾ	as	in	ɘɾɔ	bit	ɘɾʊ	been	ɘɾʊɾ	busy
ɾ	as	in	ɘɾɾɔ	bait	ɾɔ	eight	ɔɾ	whey
ɭ	as	in	ɘɭɔ	bet	ʊɭʊ	said	ɘɭʊɾ	bury
ɭ	as	in	ɘɭɔ	bat	ɒɯɭʊ	plaid	ɭʊ	Anne
ɬ	as	in	ɒɬɯ	pool	ʊɬɘ	tomb	ʊɬɒ	soup
ɬ	as	in	ɒɬɯ	pull	ɘɬɯɜ	wolf	ɑɬʊ	could
ɬɬ	as	in	ɒɬɬɯ	pole	ɘɬɬ	beau	ʊɬɬɯ	soul
ɟ	as	in	ɒɟɯ	Paul	ʊɟɑ	talk	ʊɱɟ	jaw
ɟ	as	in	ɒɟɯ	Poll	ɔɟɔ	what	ɑɟɜ	cough
ɻ	as	in	ɘɻɔ	but	ʊɻɘ	some	ɯɻɜ	rough
ɻ	as	in	ɻʊɑ	ask	ɯɻʊɔ	last	ɻʊɔ	ant
ɹ	as	in	ɹ	ah	ɹʏɘ	arm	ɹʊɔ	aunt
ɪ	as	in	ɔɪʏ	her	ɘɪʏɘ	worm	ɘɪʏ	myrrh
ɽɾ	as	in	ɔɽɾ	high	ɽɾ	eye	ɛɽɾɯ	guile
ɽɬ	as	in	ɔɽɬ	how	ɘɽɬ	bough	ɔɽɬʊ	house
ɟɾ	as	in	ɔɟɾ	hoy	ɯɟɾɯ	noise	ɘɟɾ	boy

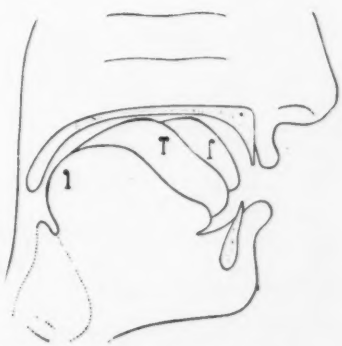
Glides.

ɜ	or	ɬ	a glide towards	ɜ	or	ɬ	; ɯɻɜ	or	ɯɻɬ , now
ʏ	or	ɪ	a glide towards	ɯ	or	ɪ	; ɘɾʏ	or	ɘɾɪ , beer
ʎ	or	ɾ	a glide towards	ɱ	or	ɾ	; ɘɻʎ	or	ɘɻɾ , my

Basis of the Symbols.



BASIS FOR CONSONANT SYMBOLS.



BASIS FOR VOWEL SYMBOLS.

N. B.—Those who desire to go more deeply into the subject of the Melville Bell Symbols are recommended to consult Dr. Alexander Graham Bell's lectures upon "The Mechanism of Speech," delivered before the American Association to Promote the Teaching of Speech to the Deaf. Published by Funk & Wagnalls Company, New York and London: Second edition, 1907. The scientific use of the Symbols is explained in the chapter on "Methods of Studying the Mechanism of Speech," pp. 34-50. For "Method of Teaching the Symbols to the Deaf," see pp. 51-76.

Special shuttles, containing nearly every Speech Symbol yet devised, have been cut for use on the Hammond typewriter. The Universal Alphabetics keyboard can be used interchangeably with the regular English characters on this machine. The price of this special shuttle of Universal Alphabetics, if bought directly from the Volta Bureau, is $2.50 each. Orders should be addressed to F. W. Booth, Superintendent.

ضمير المتكلم المفرد المذكر

ضمير المتكلم المفرد المؤنث

ضمير المخاطب المفرد المذكر

ضمير المخاطب المفرد المؤنث

ضمير الغائب المفرد المذكر

ضمير الغائب المفرد المؤنث

ضمير المتكلم المثنى المذكر والمؤنث

ضمير المخاطب المثنى المذكر والمؤنث

ضمير الغائب المثنى المذكر

ضمير الغائب المثنى المؤنث

ضمير المتكلم الجمع المذكر والمؤنث

ضمير المخاطب الجمع المذكر

ضمير المخاطب الجمع المؤنث

ضمير الغائب الجمع المذكر

ضمير الغائب الجمع المؤنث

ﻣﺪﺭﺳﻪ ﺍﻟﻤﻌﻠﻤﻴﻦ

ﺍﻟﻤﺪﺭﺳﻪ ﻫﻲ ﺍﻟﺘﻲ ﻳﺘﻌﻠﻢ ﻓﻴﻬﺎ ﺍﻟﻤﻌﻠﻤﻮﻥ ﻛﻴﻒ ﻳﻌﻠﻤﻮﻥ ﺍﻟﺘﻼﻣﻴﺬ ﻭﻳﺠﺐ ﺃﻥ ﻳﻜﻮﻥ ﻟﻜﻞ ﻣﺪﺭﺳﺔ ﻣﻌﻠﻢ ﺃﻭ ﻣﻌﻠﻤﺔ ﻟﻜﻞ ﺗﻠﻤﻴﺬ ﻭﺗﻠﻤﻴﺬﺓ ﻭﻳﺠﺐ ﺃﻥ ﻳﻜﻮﻥ ﻋﺪﺩ ﺍﻟﺘﻼﻣﻴﺬ ﻭﺍﻟﺘﻠﻤﻴﺬﺍﺕ ﻓﻲ ﻛﻞ ﻣﺪﺭﺳﺔ ﻗﻠﻴﻼ ﺣﺘﻰ ﻳﺴﻬﻞ ﻋﻠﻰ ﺍﻟﻤﻌﻠﻢ ﺃﻭ ﺍﻟﻤﻌﻠﻤﺔ ﺍﻟﻘﻴﺎﻡ ﺑﻮﺍﺟﺒﻪ ﻧﺤﻮ ﺗﻠﺎﻣﻴﺬﻩ ﻭﺗﻠﻤﻴﺬﺍﺗﻪ ﻭﻳﺠﺐ ﺃﻥ ﻳﻜﻮﻥ ﻓﻲ ﻛﻞ ﻣﺪﺭﺳﺔ ﻣﻦ ﺍﻟﻤﺪﺍﺭﺱ ﺍﻟﺘﻲ ﻳﺘﻌﻠﻢ ﻓﻴﻬﺎ ﺍﻟﺘﻼﻣﻴﺬ ﻛﻞ ﻣﺎ ﻳﻠﺰﻡ ﻟﺘﻌﻠﻴﻤﻬﻢ ﻭﺗﺮﺑﻴﺘﻬﻢ ﻭﺗﻬﺬﻳﺒﻬﻢ ﻭﺗﻘﻮﻳﻢ ﺃﺧﻼﻗﻬﻢ ﻭﺗﻨﺸﻴﻄﻬﻢ ﻭﺗﺮﻏﻴﺒﻬﻢ ﻓﻲ ﺍﻟﻌﻠﻢ ﻭﺍﻟﻌﻤﻞ ﻭﺍﻟﺘﻔﻜﻴﺮ ﻭﺍﻟﺘﺄﻣﻞ ﻭﺍﻟﺒﺤﺚ ﻭﺍﻟﺘﺠﺮﺑﺔ ﻭﺍﻟﺘﺪﺭﻳﺐ ﻋﻠﻰ ﺍﻟﺘﻌﻠﻴﻢ ﻭﺍﻟﺘﺮﺑﻴﺔ ﻭﺍﻟﺘﻬﺬﻳﺐ ﻭﺍﻟﺘﻘﻮﻳﻢ ﻭﺍﻟﺘﻨﺸﻴﻂ ﻭﺍﻟﺘﺮﻏﻴﺐ

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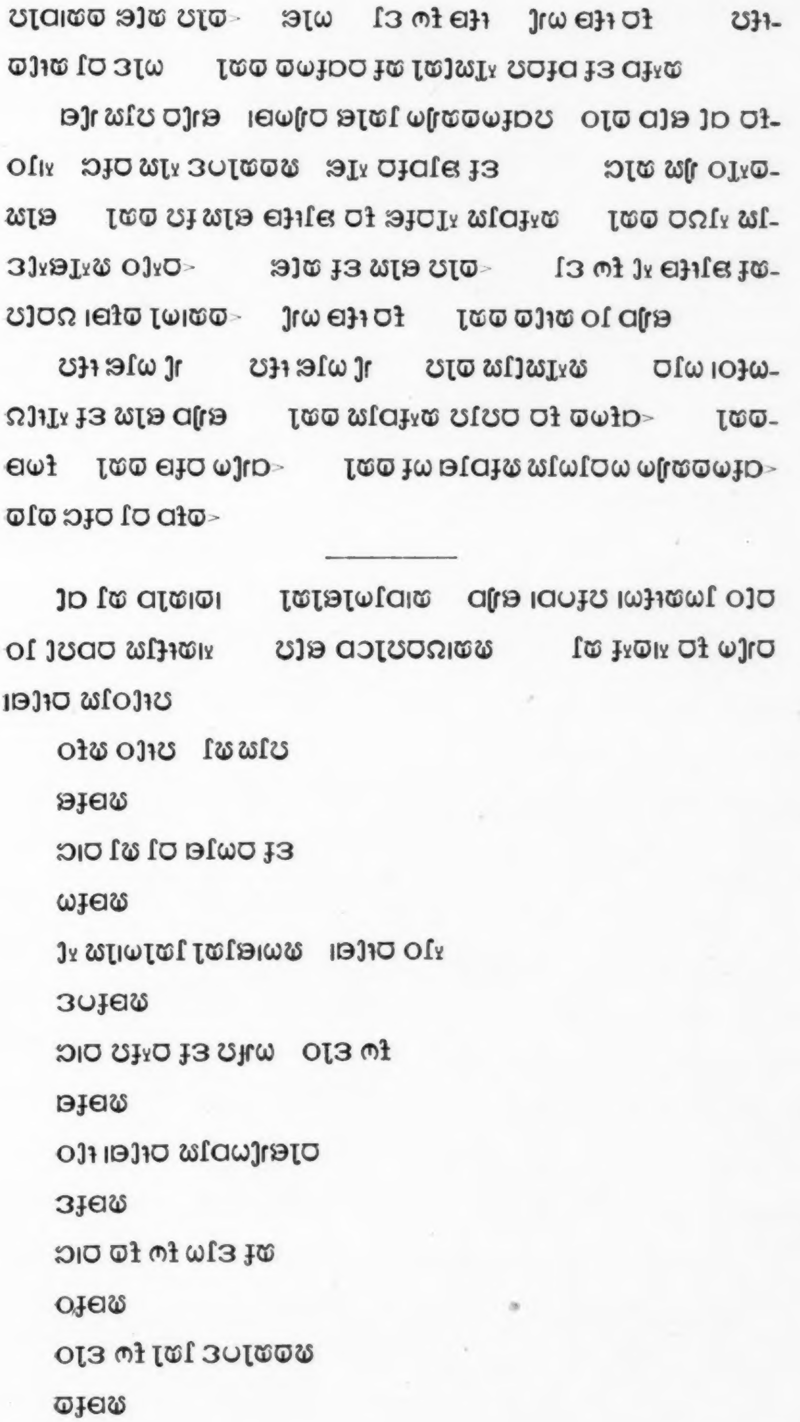
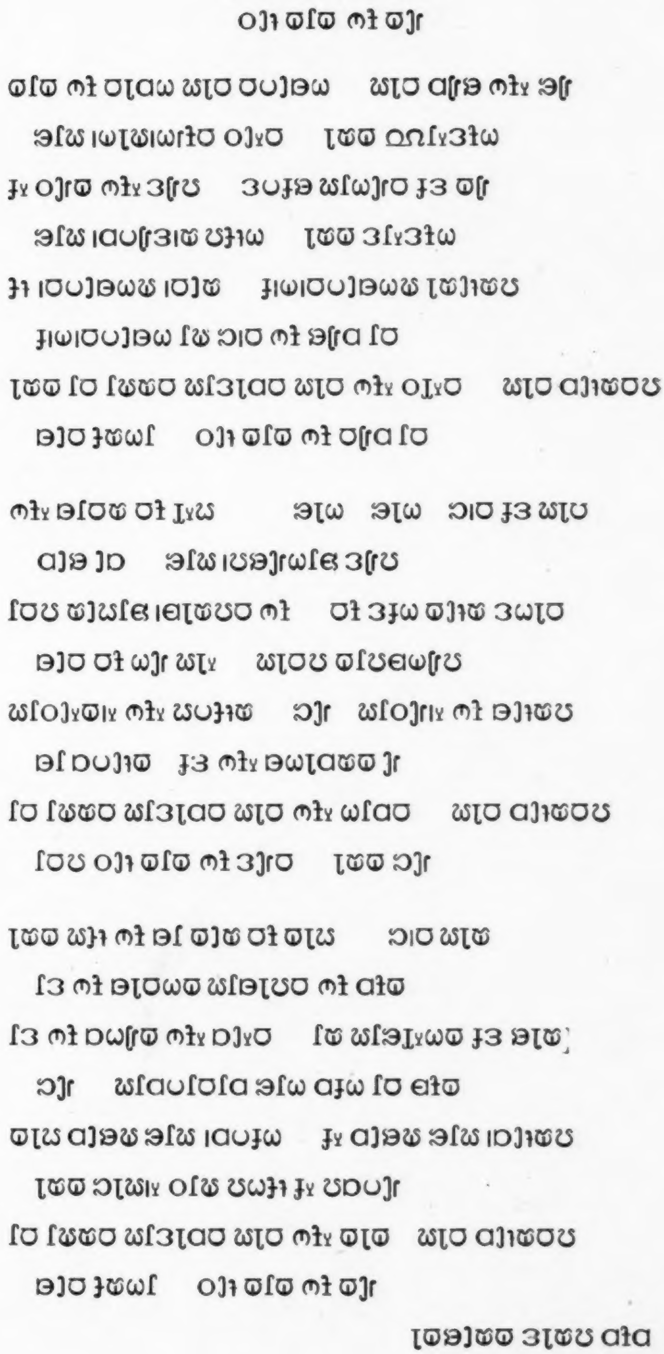
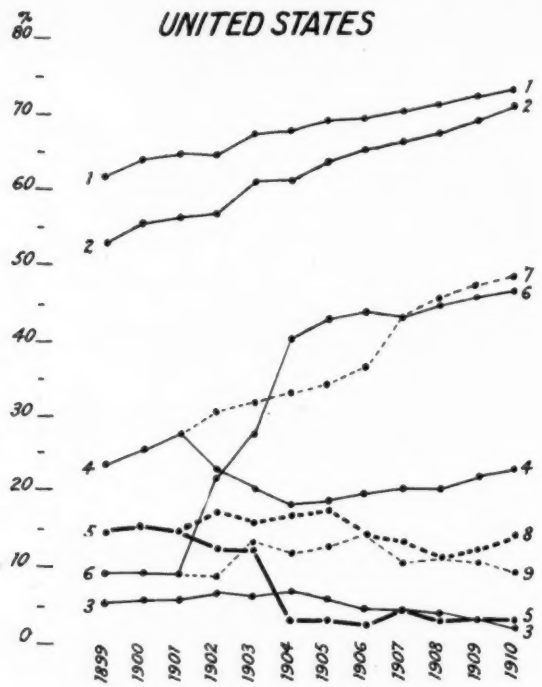
[1] From "Visible Speech Miscellanies," a manuscript book containing stories transcribed in symbols by students of the School of Vocal Physiology, conducted by A. Graham Bell, 1874.



[1] From "Visible Speech Miscellanies."

How did you Die?





NUMBER OF PUPILS.

Year	Taught Speech	Speech Used	Not Used†	Taught by Speech			Schoolroom Usage		
				S	SS‡	SSS‖	S	SS‡	SSS‖
	1	2	3	4	5	6	7	8	9
1899	6460	5584	535	2496	1549	975			
1900*	6884	5969	582	2757	1643	995			
1901	7131	6167	621	3020	1611	1009			
1902	7164	6276	712	2506	1323	2412	3100	1903	938
1903	7561	6793	645	2331	1364	3098	3552	1754	1487
1904	7578	6858	720	2050	305	4503	3715	1854	1289
1905	7994	7373	621	2153	278	4942	3911	2038	1424
1906	8145	7679	466	2279	252	5148	4274	1682	1723
1907	8320	7852	468	2359	393	5100	5067	1521	1264
1908	8151	8010	441	2412	304	5294	5389	1304	1317
1909	8872	8496	376	2631	279	5586	5758	1458	1280
1910	9132	8884	248	2830	290	5764	5998	1733	1153

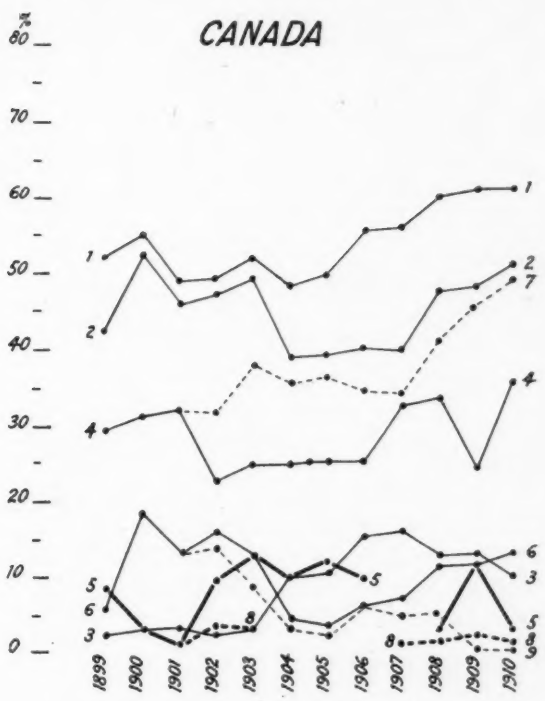
PERCENTAGE OF PUPILS.

1899	61.4	53.1	5.1	23.7	14.7	9.2			
1900	64.0	55.5	5.4	25.7	15.3	9.2			
1901	64.7	56.0	5.6	27.4	14.6	9.2			
1902	64.7	56.7	6.4	22.6	12.0	21.8	30.6	17.2	8.5
1903	67.2	60.3	5.8	20.0	12.1	27.4	31.5	15.6	13.2
1904	67.3	60.9	6.4	18.2	2.7	40.0	33.0	16.5	11.4
1905	69.1	63.7	5.4	18.6	2.4	42.7	33.8	17.6	12.3
1906	69.0	65.0	4.0	19.3	2.1	43.6	36.2	14.2	14.6
1907	70.1	66.1	4.0	19.9	3.3	42.9	42.7	12.8	10.6
1908	70.9	67.2	3.7	20.2	2.6	44.4	45.2	11.0	11.0
1909	72.2	69.1	3.1	21.4	2.3	45.4	46.8	11.9	10.4
1910	73.1	71.1	2.0	22.6	2.3	46 2	48.0	13.9	9.2

* For corrected Table for 1900, see Vol. II, p. 549. † Column 3, "not used," includes all cases where it is not known that speech is used as a means of instruction. ‡ Columns 5 and 8 include unclassified cases taught by SS. ‖ Columns 6 and 9 include unclassified cases taught by SSS.

The diagrams represent graphically the percentage of pupils taught speech in schools for the deaf in the United States and Canada, according to the statistics which have been gathered annually by the REVIEW since 1899. The figures on which the diagrams are based are given in each case immediately under them and the columns are numbered to correspond to the curves upon the diagrams.

1. Total taught Speech. (*Summation of all cases.*)
2. Speech *used* as a means of instruction (*with or without Spelling or Sign-language*).
3. Taught Speech, but Speech *not used* as a means of instruction.



NUMBER OF PUPILS.

Year	Taught Speech	Speech Used	Not Used†	Taught by Speech			Schoolroom Usage		
				S	SS	SSS	S	SS	SSS
	1	2	3	4	5	6	7	8	9
1899	404	330	14	225	64	41			
1900	434	411	23	247	20	144			
1901	384	361	23	251	8	102			
1902	393	377	16	180	75	122	250	20	107
1903	387	367	20	183	93	91	283	21	63
1904	354	282	72	179	75	28	259	—	23
1905	346	273	73	174	76	23	255	—	18
1906	408	296	112	183	69	41	254	—	42
1907	421	301	120	246	—	55	259	8	34
1908	487	386	101	271	22	93	333	13	40
1909	483	381	102	193	94	94	360	16	5
1910	491	412	79	286	23	103	395	10	7

PERCENTAGE OF PUPILS.

1899	52.1	42.6	1.8	29.0	8.3	5.3			
1900	55.4	52.5	2.9	31.5	2.6	18.4			
1901	48.8	45.9	2.9	31.9	1.0	13.0			
1902	49.2	47.2	2.0	22.6	9.4	15.3	31.4	2.6	13.4
1903	51.8	49.1	2.7	24.5	12.4	12.2	37.8	2.8	8.4
1904	48.2	38.4	9.8	24.4	10.2	3.8	35.3	—	3.1
1905	49.5	39.1	10.4	24.9	10.9	3.3	36.5	—	2.6
1906	55.4	40.2	15.2	24.8	9.4	6.0	34.5	—	5.7
1907	55.7	39.8	15.9	32.5	—	7.3	34.2	1.1	4.5
1908	60.0	47.5	12.5	33.4	2.7	11.4	41.0	1.6	4.9
1909	60.8	48.0	12.8	24.3	11.9	11.8	45.4	2.0	0.6
1910	60.9	51.1	9.8	35.5	2.9	12.8	49.0	1.2	0.8

MEANS OF INSTRUCTION IN SCHOOL AND OUTSIDE.

4. Taught by Speech (*no Spelling, no Sign-language*).
5. Taught by Speech and Spelling (*no Sign-language*).
6. Taught by Speech, Spelling, and Sign-language.

SCHOOLROOM USAGE.

(Without reference to outside instruction.)

7. Taught by Speech (*no Spelling, no Sign-language*).
8. Taught by Speech and Spelling (*no Sign-language*).
9. Taught by Speech, Spelling, and Sign-language.

TABLE I.—SCHOOLS FOR THE DEAF IN THE UNITED STATES.

Arranged alphabetically according to location.

State or Territory	Town	Street or District	Official Name of School	Chief Executive Officer
Alabama	Talladega		Alabama School for the Deaf	Joseph H. Johnson, M. A.
Arkansas	Little Rock		Arkansas Deaf-Mute Institute	Isaac B. Gardner.
California	Berkeley		California Institution for the Deaf and the Blind.	Douglas Keith.
do	Los Angeles		Los Angeles Day-School for the Deaf	Mary E. Bennett.
do	Oakland	Seventeenth and West Sts	Oakland Oral Public School for the Deaf	Emma M. Firth.
do	....do	Telegraph Ave., No. 4002	St. Joseph's School for the Deaf	Sister M. Valeria.
do	Sacramento	Twenty-seventh and G Sts	Sacramento Day-School for the Deaf	Alice Jenkins.
do	San Francisco	Golden Gate Av., nr. Pierce St.	San Francisco Day-School for the Deaf	Mrs. Jennie B. Holden.
Colorado	Col. Springs		Colorado School for the Deaf and the Blind	W. K. Argo, M. A., LL. D.
Connecticut	Hartford		American School for the Deaf	Job Williams, M. A., L. H. D.
do	Mystic		Mystic Oral School for the Deaf	Jane and Elleanor B. Worcester.
Dist. Columbia.	Washington	Kendall Green	Columbia Institution for the Deaf and Dumb	E. M. Gallaudet, Ph. D., LL. D.
			Comprising { The Kendall School for the Deaf	Lyman Stead, M. A.
			Comprising { and Gallaudet College	E. M. Gallaudet, Ph. D., LL. D.
Florida	St. Augustine		Florida School for Blind, Deaf, and Dumb	A. H. Walker, B. A.
Georgia	Cave Spring		Georgia School for the Deaf	Wesley O. Connor.
do	Macon		School for the Deaf	M. M. Stapler, M. D.
Idaho	Boise		Idaho State School for the Deaf and the Blind	Paul H. Martin.
Illinois	Aurora	Center School	Aurora Day-School for the Deaf	K. Theo. Riggs.
do	Chicago	Ashland and Wabansia Sts	Burr Public Day-School for the Deaf	Mary T. McCowen.
do	....do	Ashland and West 13th Sts	Clarke Public Day-School for the Deaf	
do	....do	Chestnut and N. State Sts	Ogden Public Day-School for the Deaf	
do	....do	Edgewood Ave. & Catalpa Ct.	Darwin Public Day-School for the Deaf	
do	....do	46th St. and Hermitage Ave.	Seward Public Day-School for the Deaf	
do	....do	Harrison, near Halstead St	Dore Public Day-School for the Deaf	
do	....do	Ingleside Ave. and 54th St	Kozminski Public Day-School for the Deaf	
do	....do	Rockwell St. n'r Fullerton Ave.	Goethe Public Day-School for the Deaf	
do	....do	67th St. and Stewart Ave	Normal Practice Public Day-School for the Deaf.	
do	....do	31st and Loomis Sts	Holden Public Day-School for the Deaf	
do	....do	21st Place and California Ave	Hammond Public Day-School for the Deaf	
do	....do	21st and Robey Sts	Froebel Public Day-School for the Deaf	
do	....do	Belmont and 40th Aves	Ephpheta School for the Deaf	Annie M. Larkin.
do	....do	6550 Yale & 6756 Normal Aves.	McCowen Oral School for Young Deaf Children.	Mrs. Cornelia B. Eggers.
do	Jacksonville		Illinois School for the Deaf	Charles P. Gillett.
do	Moline		Moline Day-School for the Deaf	Meta C. Wittig.
do	Rock Island	7th Ave. and 22d St	Rock Island Day-School for the Deaf	Meta C. Wittig.
Indiana	Indianapolis		Indiana State School for the Deaf	Richard Otto Johnson.
Iowa	Council Bluffs.		Iowa School for the Deaf	Henry W. Rothert.
Kansas	Olathe		Kansas School for the Deaf	Cyrus E. White, M. A.
Kentucky	Danville		Kentucky School for the Deaf	Augustus Rogers, M. A.

Indiana	Indianapolis		Indiana School for the Deaf	Henry W. Rothert.
Iowa	Council Bluffs.		Iowa School for the Deaf	Cyrus E. White, M. A.
Kansas	Olathe		Kansas School for the Deaf	Augustus Rogers, M. A.
Kentucky	Danville		Kentucky School for the Deaf	
Louisiana	Baton Rouge		Louisiana Inst. for Ed. of Deaf and Dumb	S. M. Robertson, M. A.
do	Chinchuba	St. Tammany Parish	Deaf-Mute Inst. of the Holy Rosary	Sister M. Athanasia.
Maine	Portland	Spring St., Nos. 79 to 85	Maine School for the Deaf	Elizabeth R. Taylor.
Maryland	Baltimore	Hollins St., Nos. 851 to 853	F. Knapp's Institute	Wm. A. Knapp.
do	do	McCulloh St., No. 903	St. Francis Xavier's School for the Deaf	Mother M. Benedict Glancy.
do	Frederick City		Maryland School for the Deaf and Dumb	Chas. W. Ely, M. A., L. H. D.
do	Kensington		Home School for Little Deaf Children	Anna C. Reinhardt.
do	Parkville		Maryland School for the Colored Blind and Deaf	J. F. Bledsoe, M. A., Supt. T. C. Forrester, Res. Prin.
Massachusetts	Beverly	113 Elliot St	New England Industrial School for the Deaf	Oakley M. Bockée.
do	Boston	Newbury St., No. 178	Horace Mann School	Sarah Fuller.
do	Northampton		Clarke School for the Deaf	Caroline A. Yale, LL. D.
do	Randolph	North Main St	Boston School for the Deaf	Rev. Thomas Magennis.
do	West Medford	Woburn St., No. 93	Sarah Fuller Home for Little Deaf Children	Eliza L. Clarke.
Michigan	Bay City		Bay City Day-School for the Deaf	Caroline Shaw.
do	Calumet		Calumet Day-School for the Deaf	Frances Dewar.
do	Detroit	Second and Porter Sts	Detroit Day-School for the Deaf	Gertrude Van Adestine.
do	Flint		Michigan School for the Deaf	F. D. Clarke, M.A., C. E., L. H. D.
do	Grand Rapids		Grand Rapids Day-School for the Deaf	Martha M. Hill.
do	Iron Mountain		Iron Mountain Day-School for the Deaf	Anna Mae Trondson.
do	Ironwood		Ironwood Day-School for the Deaf	Rose I. Kreutzer.
do	Kalamazoo		Kalamazoo Day-School for the Deaf	Alice M. Robie.
do	Lake Linden		Lake Linden Day-School for the Deaf	Mary E. Duggan.
do	Manistee		Manistee Day-School for the Deaf	Harriet I. Sanford.
do	Marquette		Marquette Day-School for the Deaf	Maria P. Templeton.
do	North Detroit		Evangelical Lutheran Deaf-Mute Institute	Rev. William Gielow, B. A.
do	Saginaw		Saginaw Day-School for the Deaf	Etta E. MacFarlane.
do	Sault Ste. Marie		Sault Ste. Marie Day-School for the Deaf	Jessie L. Thew.
do	Traverse City		Traverse City Day-School for the Deaf	Harryette A. Maxted.
Minnesota	Faribault		Minnesota School for the Deaf	James N. Tate, M. A., LL. D.
do	Northfield		St. Olaf College, Dept. for the Deaf	A. O. B. Molldrem, M. A.
Mississippi	Jackson		Mississippi Inst. for Ed. of Deaf and Dumb	J. R. Dobyns, M. A., LL. D.
Missouri	Fulton		Missouri School for the Deaf	Noble B. McKee, M. A., Ph. D.
do	St. Louis	901 N. Garrison Ave	Immaculate Conception School for the Deaf	Sisters of St. Joseph.
do	do	Henrietta St., No. 3435	Gallaudet School	Rev. James H. Cloud, M. A.
do	S. St. Louis	9439 So. Broadway	St. Joseph's Institute for the Deaf	Mother Mechtilda.
Montana	Boulder		Montana School for the Deaf and the Blind	L. E. Milligan, M. A.
Nebraska	Omaha		Nebraska Institute for the Deaf and Dumb	Reuben E. Stewart, M. A.
New Jersey	Trenton		New Jersey School for the Deaf	John P. Walker, M. A.
New Mexico	Sante Fe		New Mexico Asylum for the Deaf and Dumb	W. O. Connor, Jr., M. A.
New York	Albany	Pine Hills	Albany Home Sch. for Oral Instr. of the Deaf	Mary McGuire
do	Brooklyn	113 Buffalo Ave	Branch of St. Joseph's Inst. for the Improved Instruction of Deaf-Mutes	N. Frances O'Connor.
do	do	St. Nicholas Av. & Suydam St.	Public School No. 162	M. Lizzie Donohoe.
do	Buffalo	Edward St., No. 125	Le Couteulx St. Mary's Inst. for the Improved Instruction of Deaf-Mutes	Sister Mary Anne Burke.
do	Fordham	East 188th St., No. 772	Branch of St. Joseph's Inst. for the Improved Instruction of Deaf-Mutes	Mary A. Kennedy.

TABLE I.—CONTINUED.—SCHOOLS FOR THE DEAF IN THE UNITED STATES.

State or Territory	Town	Street or District	Official Name of School	Chief Executive Officer
New York	Malone		Northern New York Institution for Deaf-Mutes	Edward C. Rider.
do	New York	225 E. 23d St	Public School No. 47	Margaret A. Regan.
do	do	904 Lexington Ave	New York Inst. for Im'd Inst'n of Deaf-Mutes	Harris Taylor.
do	do	1 and 2 Mt. Morris Park, W.	Wright Oral School	John D. Wright, M. A.
do	do	W. 163d St	New York Inst. for Instr. of Deaf and Dumb	Enoch Henry Currier, M. A.
do	do	534 W. 187th St	Reno Margulies School for Children with Defective Hearing	Mrs. A. Reno Margulies.
do	Rochester	North St. Paul St., No. 945	Western New York Inst. for Deaf-Mutes	Z. F. Westervelt, LL. D.
do	Rome		Central New York Inst. for Deaf-Mutes	E. A. Gruver, B. A.
do	Westchester		Branch of St. Joseph's Inst. for the Improved Instruction of Deaf-Mutes	Ellen E. Cloak.
North Carolina	Morganton		North Carolina School for the Deaf and Dumb	E. McK. Goodwin, M. A.
do	Raleigh		North Carolina School for the Blind and Deaf	John E. Ray, M. A.
North Dakota	Devils Lake		School for the Deaf and Dumb	Dwight F. Bangs, M. A.
Ohio	Ashtabula	Division Street	Ashtabula Day-School for the Deaf	Virginia O. Taylor.
do	Cincinnati	Grand and Morris Sts	Miss Breckenridge's School	Mary S. Breckinridge.
do	do	721 East Sixth St	Notre Dame School for the Deaf	Sister Mary of the Sacred Heart.
do	do	719 West Sixth St	L. S. Fechheimer Sch. for Promotion of Speech and Hearing	Virginia A. Osborn.
do	Cleveland	2380 E. 55th St	Cleveland Day-School for the Deaf	Grace C. Burton, M. A.
do	Columbus		Ohio Inst. for the Education of Deaf and Dumb	J. W. Jones, M. A.
do	Conneaut		Conneaut Day-School for the Deaf	Mrs. Rora Keeler.
do	Dayton	1st and St. Clair Sts	Dayton Day-School for the Deaf	Nannie C. Kennedy.
Oklahoma	Guthrie		Oklahoma School for the Deaf	A. A. Stewart.
do	Taft		Industrial Institute for the Deaf, Blind, and Orphans of the Colored Race	S. Douglas Russell.
Oregon	Portland	East 12th and Ankeny Sts	Portland Day-School for the Deaf	Anna Sullivan.
do	Salem		Oregon School for Deaf-Mutes	Edward S. Tillinghast, B. A.
Pennsylvania	Edgewood P'k		West Penna. Inst. for the Instruction of the Deaf and Dumb	William N. Burt, M. A., Ph. D.
do	Philadelphia	Belmont and Monument Aves.	Home for the Training in Speech of Deaf Children before they are of School Age	Mary S. Garrett.
do	do	Mount Airy	Pennsylvania Institution for the Deaf and Dumb	A. L. E. Crouter, M. A., LL. D.
do	Pittsburgh	1613 Lowrie St., N. Side	Pittsburgh Catholic School for the Deaf	Sister Mary Cecelia.
do	Scranton		Pennsylvania Oral School for the Deaf	Kate H. Fish.
do	Swarthmore	Chester R'd and Ogden Ave.	Swarthmore School and Kindergarten for the Deaf	Mrs. J. Scott Anderson.
Rhode Island	Providence	520 Hope St	Rhode Island Institute for the Deaf	Edwin G. Hurd, M. A.
South Carolina	Cedar Spring		S. Carolina Inst. for the Education of the Deaf and the Blind	Newton F. Walker.
South Dakota	Sioux Falls		South Dakota School for Deaf-Mutes	James D. McLaughlin.
Tennessee	Knoxville		Tennessee Deaf and Dumb School	Thomas L. Moses.

South Dakota..	Sioux Falls....	.....	South Dakota School for Deaf-Mutes.....	James D. McLaughlin.
Tennessee.....	Knoxville.....	.....	Tennessee Deaf and Dumb School.....	Thomas L. Moses.
Texas.....	Austin.....	.....	Deaf, Dumb and Blind Inst. for Colored Youth..	H. S. Thompson, M. A.
do.....	....do.....	.....	Texas Deaf and Dumb Asylum.....	J. H. W. Williams.
Utah.....	Ogden.....	.....	Utah State School for the Deaf and the Blind...	Frank M. Driggs.
Virginia.....	Newport News.	.....	School for Colored Deaf and Blind Children.....	William C. Ritter.
do.....	Staunton.....	.....	Virginia School for the Deaf and the Blind....	William A. Bowles.
Washington....	Seattle.....	20th Ave. and Thomas St.....	Seattle Day-School for the Deaf.....	M. Ina Smith.
do.....	Vancouver....	.....	Washington State School for Deaf and Blind...	Thomas P. Clarke.
West Virginia..	Romney.....	.....	West Virginia School for Deaf and Blind.....	R. Cary Montague.
Wisconsin.....	Antigo.....	.....	Antigo Day-School for the Deaf.....	Pearl E. Tompkins.
do.....	Appleton.....	Sixth Ward Building.....	Appleton Day-School for the Deaf.....	Hannah I. Gardner.
do.....	Ashland.....	Seventh Ave. and Second St....	Ashland Day-School for the Deaf.....	Margaret Clowry.
do.....	Black R'r F'lls	High School Building.....	Black River Falls School for the Deaf.....	Tillie Walden.
do.....	Bloomington..	.....	Bloomington Day-School for the Deaf.....	Ruby E. Morris.
do.....	Delavan.....	.....	Wisconsin State School for the Deaf.....	E. W. Walker.
do.....	Eau Claire....	High School Building.....	Eau Claire Day-School for the Deaf.....	Jennie C. Smith.
do.....	Fond du Lac...	Grant School.....	Fond du Lac Day-School for the Deaf.....	Agnes Sullivan.
do.....	Green Bay.....	Ward School.....	Green Bay Day-School for the Deaf.....	M. Stella Flatley.
do.....	La Crosse....	Sixth and Vine Sts.....	La Crosse Day-School for the Deaf.....	Henrietta E. Allen.
do.....	Madison.....	Doty School.....	Madison Day-School for the Deaf.....	Matild Flatley.
do.....	Marinette.....	High School Building.....	Marinette Day-School for the Deaf.....	Katherine F. Reed.
do.....	Milwaukee....	Seventh and Prairie Sts.....	Milwaukee School for the Deaf.....	Frances Wettstein.
do.....	New London...	.....	New London Day-School for the Deaf.....	Carrie H. Archibald.
do.....	Oshkosh.....	Dale School.....	Oshkosh School for the Deaf.....	Anna Nugent.
do.....	Platteville....	.....	Platteville Day-School for the Deaf.....	Matie B. Gamble.
do.....	Racine.....	McMynn School.....	Racine Day-School for the Deaf.....	Katherine C. Grimes.
do.....	Rice Lake.....	.....	Rice Lake Day-School for the Deaf.....	Katharine Fulton.
do.....	St. Francis....	.....	St. John's Institute for Deaf-Mutes.....	Rev. M. M. Gerend.
do.....	Sheboygan....	Second Ward School.....	Sheboygan Day-School for the Deaf.....	Julia L. Dean.
do.....	Stevens Point..	.....	Stevens Point Day-School for the Deaf.....	E. Ellen MacNees.
do.....	Wausau.....	.....	Wausau Day-School for the Deaf.....	Margaret Hurley.
do.....	West Superior.	Howe School.....	Superior Day-School for the Deaf.....	Lowena A. Dignin.

SCHOOLS FOR THE DEAF IN CANADA.

Manitoba.....	Winnipeg.....	.....	Institution for the Deaf and Dumb.....	Howard J. McDermid, M. D.
New Brunsw'k.	St. John.....	Lancaster Heights.....	New Brunswick School for the Deaf.....	Jos. Keating.
Nova Scotia....	Halifax.....	.....	Halifax Institution for the Deaf and Dumb.....	James Fearon.
Ontario.....	Belleville.....	.....	Ontario Institution for the Deaf and Dumb.....	Chas. B. Coughlin, M. D.
Quebec.....	Montreal.....	St. Dennis St., No. 595.....	Catholic Female Deaf and Dumb Institution.....	Sister Marie Rose.
do.....	....do.....	Rue St. Dominique, No. 1259, North Montreal.....	Catholic Male Deaf-Mute Inst. for the Province of Quebec.....	Rev. J. M. Cadieux, C. S. V.
do.....	....do.....	Notre Dame de Grace St.....	Mackay Inst. for Prot. Deaf-Mutes and Blind....	Mrs. Harriet E. Ashcroft.

Schools for the Deaf in the United States. Arranged alphabetically according to location		Number of Pupils			Taught Speech			Speech Used as a Means of Instruction						
		Total. Query 9	Taught Speech	Speech Not Taught. Query 8	Speech Used as a means of instruction	Speech Not Used as a means of instruction. Query 7	Not stated whether used or not	S in Schoolroom S outside. Query 1	S in Schoolroom SS outside. Query 2	S in Schoolroom SSS outside. Query 3	SS in Schoolroom SS outside. Query 4	SS in Schoolroom SSS outside. Query 5	SSS in Schoolroom SSS outside. Query 6	Unclassified.
Ala.	Talladega School (1)	165	75	90	75	—	—	—	—	—	—	—	75	—
Ark.	Little Rock School	240	99	141	99	—	—	—	—	99	—	—	—	—
Cal.	Berkeley School	165	91	74	21	70	—	—	—	21	—	—	—	—
"	Los Angeles School	34	34	—	34	—	—	34	—	—	—	—	—	—
"	Oakland, 17th & West St. School	12	12	—	12	—	—	12	—	—	—	—	—	—
"	" Telegraph Ave. School	35	35	—	35	—	—	—	—	—	—	—	35	—
"	Sacramento School	9	9	—	9	—	—	9	—	—	—	—	—	—
"	San Francisco School	25	25	—	25	—	—	25	—	—	—	—	—	—
Col.	Colorado Springs School (2)	148	92	56	92	—	—	—	—	68	—	23	1	—
Conn.	Hartford School (3)	155	127	28	127	—	—	—	—	97	—	—	30	—
"	Mystic School	54	54	—	54	—	—	54	—	—	—	—	—	—
D. C.	Washington, Gallaudet College (4)	84	43	41	—	—	43	—	—	—	—	—	—	—
"	" Kendall School (5)	51	49	2	25	—	24	—	—	—	—	—	—	25
Fla.	St. Augustine School	66	40	26	40	—	—	—	—	40	—	—	—	—
Ga.	Cave Spring School (6)	165	89	76	89	—	—	—	—	89	—	—	—	—
"	Macon School (7)	—	—	—	—	—	—	—	—	—	—	—	—	—
Idaho	Boise School (8)	36	30	6	30	—	—	10	—	—	20	—	—	—
Ill.	Aurora School	7	7	—	7	—	—	7	—	—	—	—	—	—
"	Chicago Schools: (9)													
	Ashland & Wabansia Sts	33	33	—	33	—	—	33	—	—	—	—	—	—
	Ashland & W. 13th Sts	10	10	—	10	—	—	10	—	—	—	—	—	—
	California Ave. School	25	25	—	25	—	—	25	—	—	—	—	—	—
	Chestnut St. School	21	21	—	21	—	—	21	—	—	—	—	—	—
	46th St. School	9	9	—	9	—	—	9	—	—	—	—	—	—
	Harrison St. School	14	14	—	14	—	—	14	—	—	—	—	—	—
	Ingleside Ave. School	8	8	—	8	—	—	8	—	—	—	—	—	—
	17th near Loomis St	17	17	—	17	—	—	17	—	—	—	—	—	—
	67th St. & Stewart Ave	80	80	—	80	—	—	80	—	—	—	—	—	—
	31st & Loomis Sts	14	14	—	14	—	—	14	—	—	—	—	—	—
	21st Pl. & California Ave	9	9	—	9	—	—	9	—	—	—	—	—	—
	21st & Robey Sts	7	7	—	7	—	—	7	—	—	—	—	—	—
	12 Public Day Schools	247	247	—	247	—	—	247	—	—	—	—	—	—
	48 & Belmont Aves. School (10)	80	80	—	80	—	—	—	—	—	—	80	—	—
	Yale Ave. School	6	6	—	6	—	—	6	—	—	—	—	—	—

	48 & Belmont Aves. School (10)	80	80	—	80	—	—	—	—	—	—	80	—	—	—
	Yale Ave. School	6	6	—	6	—	—	6	—	—	—	—	—	—	—
"	Jacksonville School	418	315	103	315	—	—	—	—	—	—	154	161	—	—
"	Moline School (11)	3	3	—	3	—	—	3	—	—	—	—	—	—	—
"	Rock Island School	5	5	—	5	—	—	5	—	—	—	—	—	—	—
Ind.	Indianapolis School (12)	298	188	110	188	—	—	—	—	139	—	—	49	—	—
Iowa	Council Bluffs School	240	124	116	124	—	—	—	—	124	—	—	—	—	—
Kan.	Olathe School	236	127	109	127	—	—	—	—	—	—	127	—	—	—
Ky.	Danville School	344	162	182	162	—	—	—	—	148	—	14	—	—	—
La.	Baton Rouge School (13)	147	32	115	32	—	—	—	—	—	—	—	32	—	—
"	Chinchuba School (14)	35	26	9	7	19	—	—	—	—	—	—	7	—	—
Me.	Portland School (15)	105	94	11	94	—	—	—	—	—	—	—	94	—	—
Md.	Baltimore, Hollins St. School (16)	25	25	—	25	—	—	25	—	—	—	—	—	—	—
"	" McCulloh St. School.	25	25	—	25	—	—	—	—	—	—	25	—	—	—
"	Frederick City School	112	70	42	65	5	—	—	—	65	—	—	—	—	—
"	Kensington School (17)	11	11	—	11	—	—	11	—	—	—	—	—	—	—
"	Parkville School	55	47	8	32	15	—	—	—	20	—	12	—	—	—
Mass.	Beverly School	24	17	7	17	—	—	10	—	—	7	—	—	—	—
"	Boston, Newbury St. School	159	159	—	159	—	—	159	—	—	—	—	—	—	—
"	" Randolph School	132	132	—	132	—	—	132	—	—	—	—	—	—	—
"	Northampton School	149	149	—	149	—	—	149	—	—	—	—	—	—	—
"	W. Medford School	9	9	—	9	—	—	9	—	—	—	—	—	—	—
Mich.	Bay City School	8	8	—	8	—	—	8	—	—	—	—	—	—	—
"	Calumet School	11	11	—	11	—	—	11	—	—	—	—	—	—	—
"	Detroit School	60	60	—	60	—	—	60	—	—	—	—	—	—	—
"	Flint School (18)	301	193	108	193	—	—	—	—	—	—	—	—	193	—
"	Grand Rapids School	25	25	—	25	—	—	25	—	—	—	—	—	—	—
"	Iron Mountain School	6	6	—	6	—	—	6	—	—	—	—	—	—	—
"	Ironwood School	6	6	—	6	—	—	6	—	—	—	—	—	—	—
"	Kalamazoo School	7	7	—	7	—	—	7	—	—	—	—	—	—	—
"	Lake Linden School	4	4	—	4	—	—	4	—	—	—	—	—	—	—
"	Manistee School	9	9	—	9	—	—	9	—	—	—	—	—	—	—
"	Marquette School	7	7	—	7	—	—	7	—	—	—	—	—	—	—
"	North Detroit School	31	24	7	24	—	—	—	—	5	—	—	19	—	—
"	Saginaw School (19)	7	7	—	7	—	—	7	—	—	—	—	—	—	—
"	Sault Ste. Marie School	11	11	—	11	—	—	11	—	—	—	—	—	—	—
"	Traverse City School	7	7	—	7	—	—	7	—	—	—	—	—	—	—
Minn.	Faribault School	274	141	133	141	—	—	—	—	—	—	141	—	—	—
"	Northfield School	8	3	5	3	—	—	—	—	—	—	—	3	—	—
Miss.	Jackson School (20)	109	30	79	19	11	—	—	—	—	—	—	—	19	—
Mo.	Fulton School	311	133	178	133	—	—	—	—	133	—	—	—	—	—
"	St. Louis, Garrison Av. Sch. (21)	50	40	10	20	20	—	—	—	—	—	10	10	—	—
"	" Henrietta St. School	51	46	5	38	8	—	1	—	—	—	—	37	—	—
"	" So. St. Louis School	22	22	—	22	—	—	—	—	—	—	—	22	—	—
Mont.	Boulder School	50	42	8	42	—	—	—	—	—	—	42	—	—	—
Neb.	Omaha School	172	131	41	131	—	—	—	—	4	—	75	52	—	—
N. J.	Trenton School	160	160	—	160	—	—	—	—	—	—	—	160	—	—
N. M.	Santa Fé School	36	28	8	28	—	—	—	—	—	—	28	—	—	—
N. Y.	Albany School	48	48	—	48	—	—	48	—	—	—	—	—	—	—
"	Brooklyn, Buffalo Ave. Sch. (22)	101	101	—	101	—	—	—	—	101	—	—	—	—	—
"	" St. Nicholas Ave. Sch.	9	9	—	9	—	—	9	—	—	—	—	—	—	—
"	Buffalo School	175	157	18	157	—	—	—	—	30	—	127	—	—	—

SCHOOLS FOR THE DEAF IN THE UNITED STATES Arranged alphabetically according to location		NUMBER OF PUPILS			TAUGHT SPEECH			SPEECH USED AS A MEANS OF INSTRUCTION						
		Total Query 9	Taught Speech	Speech Not Taught Query 8	Speech USED as a means of instruction	Speech Not USED as a means of instruction Query 7	Not stated whether used or not	S in Schoolroom S outside Query 1	S in Schoolroom SS outside Query 2	S in Schoolroom SSS outside Query 3	SS in Schoolroom SS outside Query 4	SS in Schoolroom SSS outside Query 5	SSS in Schoolroom SSS outside Query 6	Unclassified
N. Y.	Fordham School	130	130	—	130	—	—	—	—	130	—	—	—	—
"	Malone School (23)	91	91	—	77	14	—	—	—	—	77	—	—	—
"	N. Y., East 23d St. School (24)	163	163	—	163	—	—	163	—	—	—	—	—	—
"	" Lexington Ave. School	223	223	—	223	—	—	223	—	—	—	—	—	—
"	" Mt. Morris Park School	23	23	—	23	—	—	23	—	—	—	—	—	—
"	" Washington Ht's School	503	503	—	503	—	—	—	—	324	—	179	—	—
"	" West 187th St. School	17	17	—	17	—	—	17	—	—	—	—	—	—
"	Rochester School	176	176	—	176	—	—	—	—	—	176	—	—	—
"	Rome School	102	72	30	72	—	—	—	—	72	—	—	—	—
"	Westchester School	243	243	—	243	—	—	—	—	—	—	243	—	—
N. C.	Morganton School	230	172	58	172	—	—	—	—	172	—	—	—	—
"	Raleigh School	100	34	66	34	—	—	—	—	—	—	24	10	—
N. D.	Devils Lake School	74	42	32	42	—	—	—	—	—	—	12	30	—
Ohio	Ashtabula School	6	6	—	6	—	—	6	—	—	—	—	—	—
"	Cin'nati, Gilbert & Yale Aves.	1	1	—	1	—	—	1	—	—	—	—	—	—
"	" E. 6th St. School	12	12	—	12	—	—	2	—	—	10	—	—	—
"	" W. 6th St. School	33	33	—	33	—	—	33	—	—	—	—	—	—
"	Cleveland School (25)	85	85	—	84	1	—	84	—	—	—	—	—	—
"	Columbus School	441	236	205	228	8	—	—	—	228	—	—	—	—
"	Conneaut School	5	5	—	5	—	—	5	—	—	—	—	—	—
"	Dayton School	5	5	—	5	—	—	5	—	—	—	—	—	—
Okla.	Sulphur School	207	83	124	83	—	—	—	—	47	—	36	—	—
"	Taft School	12	—	12	—	—	—	—	—	—	—	—	—	—
Ore.	Portland School	18	18	—	18	—	—	18	—	—	—	—	—	—
"	Salem School (26)	77	42	35	39	3	—	—	—	19	—	20	—	—
Penn.	Edgewood Park School	221	199	22	199	—	—	—	—	199	—	—	—	—
"	Phila., Belmont Ave. School	63	63	—	63	—	—	63	—	—	—	—	—	—
"	" Mt. Airy School	530	530	—	530	—	—	530	—	—	—	—	—	—
"	Pittsburgh School	32	32	—	32	—	—	—	—	32	—	—	—	—
"	Scranton School	101	101	—	101	—	—	101	—	—	—	—	—	—
"	Swarthmore School	4	4	—	4	—	—	4	—	—	—	—	—	—
R. I.	Providence School	68	68	—	68	—	—	68	—	—	—	—	—	—
S. C.	Cedar Spring School	123	68	55	68	—	—	—	—	68	—	—	—	—
S. D.	Sioux Falls School	84	29	55	29	—	—	—	—	—	—	—	29	—
Tenn.	Knoxville School	260	90	170	90	—	—	—	—	90	—	—	—	—
Tex.	Austin School (for colored)	59	1	58	1	—	—	—	—	—	—	—	1	—
"	Austin School (for whites)	436	261	175	261	—	—	—	—	261	—	—	—	—
Utah	Ogden School	84	73	11	73	—	—	—	—	73	—	—	—	—

S. D.	Sioux Falls School	84	29	55	29	—	—	—	—	96	—	—	1	—	
Tenn.	Knoxville School	260	90	170	90	—	—	—	—	—	—	—	—	—	
Tex.	Austin School (for colored)	59	1	58	1	—	—	—	—	—	—	—	—	—	
"	Austin School (for whites)	436	261	175	261	—	—	—	—	261	—	—	—	—	
Utah	Ogden School	84	73	11	73	—	—	—	—	52	—	21	—	—	
Va.	Newport News School (27)	18	—	18	—	—	—	—	—	—	—	—	—	—	
"	Staunton School	164	119	45	119	—	—	—	—	119	—	—	—	—	
Wash.	Seattle School	19	19	—	19	—	—	19	—	—	—	—	—	—	
"	Vancouver School (28)	108	83	25	76	7	—	—	—	45	—	7	24	—	
W. V.	Romney School	148	22	126	22	—	—	—	—	—	—	—	22	—	
Wis.	Antigo School	14	14	—	14	—	—	14	—	—	—	—	—	—	
"	Appleton School	8	8	—	8	—	—	8	—	—	—	—	—	—	
"	Ashland School	11	11	—	11	—	—	11	—	—	—	—	—	—	
"	Black River Falls School	11	11	—	11	—	—	11	—	—	—	—	—	—	
"	Bloomington School	6	6	—	6	—	—	6	—	—	—	—	—	—	
"	Delavan School	195	127	68	127	—	—	—	—	127	—	—	—	—	
"	Eau Claire School	30	30	—	30	—	—	30	—	—	—	—	—	—	
"	Fond du Lac School	10	10	—	10	—	—	10	—	—	—	—	—	—	
"	Green Bay School	17	17	—	17	—	—	17	—	—	—	—	—	—	
"	La Crosse School	6	6	—	6	—	—	6	—	—	—	—	—	—	
"	Madison School	7	7	—	7	—	—	7	—	—	—	—	—	—	
"	Marinette School	8	8	—	8	—	—	8	—	—	—	—	—	—	
"	Milwaukee School	108	108	—	108	—	—	108	—	—	—	—	—	—	
"	New London School	8	8	—	8	—	—	8	—	—	—	—	—	—	
"	Oshkosh School	12	12	—	12	—	—	12	—	—	—	—	—	—	
"	Platteville School	8	8	—	8	—	—	8	—	—	—	—	—	—	
"	Racine School	15	15	—	15	—	—	15	—	—	—	—	—	—	
"	Rice Lake School	11	11	—	11	—	—	11	—	—	—	—	—	—	
"	St. Francis School	87	63	24	63	—	—	7	—	—	—	43	13	—	
"	Sheboygan School	10	10	—	10	—	—	10	—	—	—	—	—	—	
"	Stevens Point School	10	10	—	10	—	—	10	—	—	—	—	—	—	
"	Wausau School	8	8	—	8	—	—	8	—	—	—	—	—	—	
"	West Superior School	7	7	—	7	—	—	7	—	—	—	—	—	—	
Number of pupils in 148 schools		12498	9132	3366	8884	181	67	2830	—	3168	290	1443	916	237	
Percentage " " "		100.0	73.1	26.9	71.1	1.5	0.5	22.6	—	25.4	2.3	11.6	7.3	1.9	
	CANADA														
Man.	Winnipeg School	84	25	59	3	22	—	—	—	—	—	—	3	—	
N. B.	St. John School	36	7	29	—	7	—	—	—	—	—	—	—	—	
N. S.	Halifax School	91	68	23	68	—	—	68	—	—	—	—	—	—	
Ont.	Belleville School	256	119	137	84	35	—	—	—	84	—	—	—	—	
P. Q.	Montreal:														
	St. Denis St. School	144	121	23	121	—	—	121	—	—	—	—	—	—	
	Rue St. Dominique School	120	80	40	80	—	—	80	—	—	—	—	—	—	
	Notre Dame de Grace School	75	71	4	56	15	—	17	18	7	5	5	4	—	
Number of pupils in 7 schools		806	491	315	412	79	—	286	18	91	5	5	7	—	
Percentage " " "		100.0	60.9	39.1	51.1	9.8	—	35.5	2.3	11.3	0.6	0.6	0.8	—	

For General Summary of the above, see Tables III, IV, and V. (1) to (28), see Notes, pp. 258-259.

TABLE III.—SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF.
MARCH 10, 1910.

General Summary	United States		Canada	
	No. of Pupils	Per cent of Pupils	No. of Pupils	Per cent of Pupils
Total Pupils	12498	100.0	806	100.0
Taught Speech	9132	73.1	491	60.9
Not taught Speech	3366	26.9	315	39.1
Taught Speech:				
Speech used as means of instruction	8884	71.1	412	51.1
Speech not used as means of instruction	181	1.5	79	9.8
Not stated (whether used or not)	67	0.5	—	—
Speech used as means of instruction:				
In Schoolroom— Outside—				
S — S	2830	22.6	286	35.5
S — SS	—	—	18	2.3
S — SSS	3168	25.4	91	11.3
SS — SS	290	2.3	5	0.6
SS — SSS	1443	11.6	5	0.6
SSS — SSS	916	7.3	7	0.8
Unclassified — SSS	237	1.9	—	—

Symbols employed in above Table:
S Speech (*no Spelling, no Sign-language*).
SS Speech and Spelling (*no Sign-language*).
SSS Speech, Spelling, and Sign-language.

TABLE IV.—SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF.
MARCH 10, 1910.

Means of Instruction in School and Outside (See diagrams, pp. 246 and 247)				United States		Canada	
				No. of Pupils	Per cent	No. of Pupils	Per cent
Diagrams	Schoolroom	Outside					
	S	S					
Line 4			Total S.	2830	22.6	286	35.5
	S	SS					
	SS	SS					
Line 5			Total SS. . .	290	2.3	23	2.9
	S	SSS					
	SS	SSS					
	SSS	SSS					
	Unclassified	SSS					
Line 6			Total SSS. .	5764	46.2	103	12.8

TABLE V.—SPEECH-TEACHING IN AMERICAN SCHOOLS FOR THE DEAF.
MARCH 10, 1910.

Schoolroom Usage without reference to outside instruction (See diagrams, pp. 246 and 247)				United States		Canada	
				No. of Pupils	Per cent	No. of Pupils	Per cent
Diagrams	Schoolroom	Outside					
	S	S					
	S	SS					
	S	SSS					
Line 7			Total S.....	5998	48.0	395	49.0
	SS	SS					
	SS	SSS					
Line 8			Total SS...	1733	13.9	10	1.2
	SSS	SSS					
	Unclassified	SSS					
Line 9			Total SSS..	1153	9.2	7	0.8

Symbols employed in above Tables:
S Speech (*no Spelling, no Sign-language*).
SS Speech and Spelling (*no Sign-language*).
SSS Speech, Spelling, and Sign-language.

The above statistics (Tables II, III, IV, and V) have been compiled from replies to the following queries:

Query 1. SPEECH (without spelling or sign-language) used both in the school-room and outside, with.....pupils.

Query 2. SPEECH (without spelling or sign-language) used in the school-room; but SPELLING (without sign-language) also used outside in chapel exercises, work-shop instruction, etc., with.....pupils.

Query 3. SPEECH (without spelling or sign-language) used in the school-room; but SPELLING and SIGN-LANGUAGE also used outside in chapel exercises, work-shop instruction, etc., with.....pupils.

Query 4. SPEECH and SPELLING (without sign-language) used both in the school-room and outside, with.....pupils.

Query 5. SPEECH and SPELLING (without sign-language) used in the school-room; but SIGN-LANGUAGE also used outside in chapel exercises, work-shop instruction, etc., with.....pupils.

Query 6. SPEECH, SPELLING, and SIGN-LANGUAGE used both in the school-room and outside, with.....pupils.

Query 7. Number taught ARTICULATION without speech being used as a means of instruction (their general education being carried on by silent methods) .....pupils.

Query 8. Number taught by silent methods alone, without being taught articulation or speech.....pupils.

Query 9. Number of pupils in this school March 10, 1910: Total, ...pupils.

NOTES.

(1) Talladega School (Ala.): Mr. Joseph H. Johnson, Principal, reports his school under the numbered Queries as follows: 1, 0; 2, 0; 3, 75; 4, 0; 5, 0; 6, 75; 7, 0; 8, 90; 9, 165.

(2) Colorado Springs School (Colo.): The one pupil reported under Query 6 is given as deaf-blind.

(3) Hartford School (Conn.): Dr. Job Williams, the Principal, writes: "I will not swear that the inclosed statistics are absolutely correct, but I believe they are practically. Under No. 3 one teacher said that when she wanted to scold she used signs."

(4) and (5) Washington, Gallaudet College and Kendall School (D. C.): No information received. Statistics used compiled from the statistics given in the American Annals of the Deaf of January, 1910.

(6) Cave Spring School (Ga.): Mr. W. O. Connor, the Principal, reports, in addition to 135 white pupils, "30 negroes—none taught orally in a systematic way; several are required to recite orally."

(7) Macon School (Ga.): A report received too late for use in the statistical computations, gives 3 pupils in this school, all taught orally. The school is under the direction of Dr. M. M. Stapler, with Miss Lydia M. Cook as teacher.

(8) Boise School (Idaho): Mr. Paul H. Martin, the Superintendent, writes: "This is as nearly correct as I can make it. We are making a great effort to eliminate signs from our playground, and, of course, they are forbidden in the class-room and shop. There is some signing done, but not as it used to be. We are expecting to build up an *oral* school."

(9) Chicago Schools (Ill.): The 12 schools first named constitute the Chicago system of Day-Schools. They report a total enrollment, on March 10, of 247 pupils.

(10) Chicago, Belmont and 40th Ave's, School (Ill.): Miss Annie M. Larkin, the Superintendent, writes: "The Ephpheta School is at present in a state of transition. The class-room work is carried on mostly by speech and writing, but spelling is not prohibited. Signs are permitted among the pupils (out of school hours), but these will be gradually restricted. Pupils living in Chicago go home Friday afternoon, returning Monday morning."

(11) Moline School (Ill.): Miss Meta C. Wittig, the Teacher in charge of this school, writes: "Two pupils in the grade schools come in for speech-reading for half an hour daily, besides the 3 others." She further states that she has both the Moline and Rock Island schools in charge this year.

(12) Indianapolis School (Ind.): Mr. R. O. Johnson, the Superintendent, adds to his report a foot note referring to the 49 pupils given under Query 6: "Four kindergarten classes. Very little spelling, and very little sign-language used in the school-room—natural gestures used. They might, with justice, be added to No. 3—probably have been heretofore."

(13) Baton Rouge School (La.): No information received. Statistics used from the ASSOCIATION REVIEW of June, 1909.

(14) Chinchuba School (La.): Sister M. Athanasia, the Superintendent, reports this school under the numbered Queries as follows: 1, 3; 2, 0; 3, 3; 4, 0; 5, 0; 6, 25; 7, 19; 8, 9; 9, 35.

(15) Portland School (Me.): Miss Elizabeth R. Taylor, the Principal, substitutes the word "signs" for "sign-language" in Query 6, and adds a foot note as follows: "The majority of the teachers in the school do not know the sign-language."

(16) Baltimore, Hollins St., School (Md.): Mr. Wm. A. Knapp, the Principal, writes: "We teach the pure oral method. No signs tolerated and never used in school. We ask parents and friends outside of school to use only audible speech."

(17) Kensington School (Md.): Miss Anna C. Reinhardt, the Principal, adds the foot note: "I include James and Rebecca in this list." The two pupils named are deaf, and while living in the school attend the public school in Kensington.

(18) Flint School (Mich.): Dr. F. D. Clarke, the Superintendent, reports 301 pupils in the school March 10, 1910, of whom 193 are taught speech. No figures are given under Queries 1 to 7 inclusice. As the speech pupils in this school are all reported in the Annals of January, 1910, as taught wholly or chiefly by the oral method, the 193 reported are entered in these tables in the "speech used" column.

(19) Saginaw School (Mich.): Miss Etta E. MacFarlane, the Teacher, states that her pupils are being given industrial instruction as follows: 2 in cooking; 4 in wood work; 1 in iron work; and 6 in basketry; also 6 have physical culture.

(20) Jackson School (Miss.): Dr. J. R. Dobyns, the Superintendent, writes: "In response to your request of recent date, I have to say: We have not a class or a department where spelling and signs are not used to *some* extent." No figures of the number of pupils in school, or of the number taught speech, are furnished. Statistics used compiled from the American Annals of the Deaf for January, 1909.

(21) St. Louis, N. Garrison Ave., School (Mo.): The Sisters of St. Joseph report the school under the numbered Queries as follows: 1, 20; 2, 5; 3, 25; 4, 10; 5, 25; 6, 10; 7, 20; 8, 10; 9, 50. Number of pupils taught speech, 40; number not taught speech, 10.

(22) Brooklyn, Buffalo Ave., School (N. Y.): Miss N. Frances O'Conner, the Principal, writes concerning one pupil, who she states is not taught speech, as follows: "This pupil is partly paralyzed, and therefore cannot control her vocal organs. She is taught *by* speech—she is a fairly good lip-reader."

(23) Malone School (N. Y.): Mr. E. C. Rider, the Superintendent, reports under the numbered Queries as follows: 1, 12; 2, 46; 3, 0; 4, 79; 5, 0; 6, 0; 7, 14; 8, 0; 9, 91.

(24) New York, East 23d St., School (N. Y.): The figures used are those of pupils in school on April 18, 1910.

(25) Cleveland School (Ohio): Miss Grace E. Burton, the Principal, reports the one pupil "taught articulation without speech being used as a means of instruction" as being deaf-blind.

(26) Salem School (Oregon): Mr. E. S. Tillinghast, the Superintendent, adds a foot note to his report as follows: "It seems to me impossible to answer these questions without being more or less misleading, because no distinction can be made where very little or a great deal of spelling, or speech, or signs may be used, but there is a vast difference between using occasional signs and unrestricted use. So of speech or spelling."

(27) Newport News School (Va.): No information received. Statistics used compiled from the American Annals of the Deaf for January, 1910.

(28) Vancouver School (Wash.): No information received. Statistics from the ASSOCIATION REVIEW of June, 1909.